COAL MARKET POTENTIAL AND REGIONAL COMPETITIVENESS STUDY SELECTED COAL FIELDS OF MONTANA

VOLUME II - EXECUTIVE SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

STAGG ENGINEERING SERVICES, INC.

COAL MARKET POTENTIAL AND REGIONAL COMPETITIVENESS STUDY
SELECTED COAL FIELDS OF MONTANA
VOLUME II - EXECUTIVE SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

EXECUTIVE
SUMMARY

Prepared for
Montana Department of Commerce
and
Office of the Governor, Economic Development Office
Helena, Montana

Prepared by
Stagg Engineering Services, Inc.
Consulting Geologists and Engineers
Charleston, West Virginia

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EXECUTIVE
SUMMARY

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EXECUTIVE SUMMARY

Stagg Engineering Services, Inc. and its subcontractor BBC Research & Consulting (collectively the "Study Team") have prepared an assessment of the future market demand for Montana coal production and of the degree to which state-level public policies influence the competitiveness of Montana's coal in both domestic and international markets (the "Study"). The Study is presented in two volumes — *Volume I, Results of Investigation*, and *Volume II, Executive Summary, Conclusions, and Recommendations.* The Study was prepared for the Montana Department of Commerce and the Office of the Governor, Economic Development Office (the "State").

The objective of the Study is to identify, to the extent possible, the competitive constraints and/or advantages current public policy is placing on the State's coal producers, and to determine whether such policies are likely to hinder or promote development and extraction of the State's coal resources in the rapidly changing and intensely competitive markets anticipated in the future. The State's primary concerns are twofold:

- the impact its policies will have on future tax revenues for the Coal Severance Tax Trust fund, the Coal Gross Proceeds Tax which is distributed to local governments, and the Resource Indemnity and Ground Water Assessment Tax Fund ("RIGWAT"), and
- the impact that either diminished or expanded coal development and production would have on employment and on the demand for goods and services in counties in which such changes occurred.

Information gathered in the Study will serve as input to policy-makers for possible modifications to public policies to ensure the optimum utilization of the State's coal resources and maximum economic and environmental benefits to the State's citizens.

The **completion of the Study** was a four-phase process involving a wide range of literature research, interviews, and the development of forecasting models. These phases are as follows:

- Phase I - Background Investigation
- Phase II - Assessing Future Markets and Competition
- Phase III - Development of Forecast Models
- Phase IV - Observations and Conclusions

Forecasts of production, prices, employment, state revenues, and local economic impacts were developed for three cases — Base, Upside, and Downside.

The Study Area consists of the counties of Big Horn, Musselshell, Powder River, Richland, and Rosebud. The forecast period for the Study is the ten-year period 1996 to 2005 (the "Study Period"). The effective date of the Study is January 1996.

Six surface mines and one underground are currently producing in the Study Area, with five of the surface mines producing subbituminous coal from the Powder River Basin and one producing lignite from the Fort Union Region. Virtually all production is shipped on a raw basis for consumption by utility and industrial consumers. The one underground mine began production in December 1995, and had not reached its design capacity during the Study. Montana produced slightly less than 40 million tons in 1995.

In assessing the **market potential** for existing Montana coal producers, the single most important issue is the apparent limitation placed upon the market reach of Montana production. The reasons for this limitation are complex, but generally are the result of three factors:

- geology and geography
- transportation
- consumer attitudes

It should be noted that the dramatic increase in the State's severance tax in 1975 gave the Southern Powder River Basin in Wyoming an enhanced competitive position and incentive to bring new and larger mines into production, in spite of the fact that mines in Montana were already established and producing a more valuable product.

The **fiscal and economic impacts** of the coal industry have been significant during the past 20 years, although there has been a downward trend in revenues, due in large part to the decreases experienced in the selling price of coal. While coal mining provided nearly $50 million in revenues to the State in 1995 from severance tax receipts and from its 50 percent share of federal royalties, its impact on local governments in the coal-mining counties is proportionally more significant.

Nearly 1,000 workers were employed at Montana's coal mines in 1995, with an estimated 400 of these workers living in Wyoming and commuting to the mines. The estimated 580 Montana residents employed earned approximately $31 million in 1995, including benefits, and likely paid on the order of $1 million in state income taxes. Total purchases of goods and services in the state by Montana coal mines are estimated to be slightly more than $40 million, and more than 1,600 additional jobs are estimated to have been created in the state in 1995 as a result of this activity. The combined payroll generated directly and indirectly from coal mining during the year was an estimated $67.5 million. While this figure represents a relatively small portion of Montana's statewide labor income of around $8.5 billion, it is an important share of the economy in the southeastern part of the state.

A series of **critical market issues** which have the potential to affect Montana's future coal production were identified in the Study, as follows:

- Deregulation of the U.S. electric utility industry
- Implementation of the 1990 Clean Air Act Amendments
- Consolidation of the U.S. railroad industry
- Consolidation of the U.S. coal industry
- Future developments in western U.S. coal transportation
- Enhancements of Powder River Basin coal quality
- Establishment of electricity and coal futures markets

Of these, the deregulation of the U.S. electric utility industry is considered to be the most significant to Montana producers. At the time of the Study, however, the course of deregulation is only beginning to unfold and considerable uncertainty is involved.

In developing both qualitative and quantitative conclusions regarding the outlook for the Montana coal industry during the Study Period, several **general observations** served to establish a frame of reference:

- U.S. coal production is expected to increase from a reported 1.02 billion tons in 1995 to slightly more than 1.10 billion tons in 2005, with a continued increase to 1.12 billion tons by 2010. While U.S. electricity demand growth will continue at an expected 1.8 percent a year on average, more efficient generation and transmission technologies will retard the fuel needs for base load generation. Coal's share of electrical generation will decrease modestly from its current 57 percent to 54 percent during the Study Period.
- The concurrent growth in coal production from the Powder River Basin is expected to be from the current 285 million tons a year to around 370 million tons a year during the Study Period. By the year 2005, the Powder River Basin is expected to supply one-third of all coal produced in the U.S.
- Fostered primarily by the intense competition which will be brought about by the progressing deregulation of the U.S. electric utility industry, fuel supplies will be subjected to substantial price pressure.
- To maintain their economic viability, U.S. coal producers will continue efforts to improve productivity and to reduce costs.
- The market dynamics of the Montana coal industry will continue to be dominated by the transportation link in the coal chain. Railroad operating

and marketing strategies will continue to be the primary determinant in the evolution of markets for Montana coal.

Based on the analyses in the Study of current and future market conditions facing the Montana coal industry under the Base Case forecast, the following summarized findings were developed concerning the **outlook for the Montana coal industry**.

- Total production from Montana will remain essentially flat during the Study Period, increasing from the current 40 million tons a year to a projected 44 million tons a year by 2005. A significant decline to less than 38 million tons is projected for 1996 related primarily to surplus hydroelectric power in the Pacific Northwest.
- In nominal terms, the composite selling price of coal from the state will decline from 1995 levels by more than $1.00 a ton to 1998 as a result of the renegotiation and/or termination of contracts with above-market prices. A gradual increase in the composite price is not forecast until 2002.
- No new mines are anticipated to be constructed in the state during the Study Period other than the Bull Mountain Mine No. 1 now in the development stage.
- In the Base Case forecast, one of the currently-producing mines — Big Sky — is expected to cease production during the Study Period.
- Employment at Montana's coal mines is forecast to decline by almost 20 percent during the Study Period, from the current 1,000+/- to around 810+/- as a result of continuing productivity gains and cost cutting measures.
- The State's annual coal-related revenues are forecast to decline by some $8 million by 1998 and essentially remain at that level through the remainder of the Study Period as a result of the renegotiation and/or termination of contracts with above market prices.
- Development of the coal resources in the Ashland area in Rosebud and Powder River counties will require the construction of rail access along the proposed Tongue River Railroad route or by eastward extension of the existing Burlington Northern Santa Fe spur at Colstrip. Market expansion sufficient to justify the development of greenfield mines to extract these resources will be delayed until after the Study Period.

The primary competition for Montana coal in existing markets and in the majority of potential new markets are producers from the Southern Powder River Basin, which, in the Study Team's opinion, have and will continue to have a considerable competitive

advantage over producers from the Northern Powder River Basin in Montana in most major markets. This is primarily the result of transportation advantages enjoyed by the Southern Powder River Basin due to geographic location and competition between the two rail carriers which serve it, and appreciably lower production costs, on the order of $1.50 to $2.00 a ton on a cash basis.

The **projections of annual production and composite selling price** in each of the three forecast cases are presented in abbreviated summary form in the following table:

Summary of Projected Production
And Selling Price By Case

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Base Case										
Production	37,795	41,485	42,125	41,805	42,655	41,980	43,605	43,480	43,680	44,080
Comp. Price	$9.02	$8.86	$8.05	$8.27	$8.07	$8.23	$8.23	$8.31	$8.44	$8.64
Upside Case										
Production	38,695	44,905	47,285	48,315	50,665	53,140	54,865	55,390	56,040	56,890
Comp. Price	$8.95	$8.79	$7.92	$8.07	$7.92	$7.91	$7.91	$7.96	$8.11	$8.32
Downside Case										
Production	37,085	37,635	35,175	34,135	34,555	34,380	34,805	34,280	34,630	35,130
Comp. Price	$8.99	$8.93	$8.16	$8.43	$8.26	$8.38	$8.45	$8.61	$8.76	$8.97

The **projections of fiscal impacts on the State** in each of the three forecast cases are presented in abbreviated summary form in the following table:

Summary of Projected Fiscal Impacts
By Case for Selected Years

	Severance	Gross Proceeds	RIGWAT	Federal Royalties
1995	33.939	11.536	1.000	16.916
Base Case				
1996	30.433	10.731	0.951	15.210
1999	28.927	11.010	0.979	13.788
2002	29.072	11.651	1.023	14.135
2005	30.717	12.402	1.085	15.452
Total - 1996-2005	295.544	114.075	10.061	144.924
Upside Case				
1996	30.745	10.875	0.966	15.314
1999	32.768	12.428	1.101	15.835
2002	36.614	14.430	1.234	17.496
2005	40.044	15.783	1.344	19.771
Total - 1996-2005	352.019	134.732	11.677	171.438
Downside Case				
1996	29.919	10.421	0.926	15.057
1999	23.197	9.098	0.819	11.161
2002	23.474	9.783	0.846	11.238
2005	25.145	10.544	0.907	12.411
Total - 1996-2005	248.617	98.280	8.618	121.354

The **projections of economic impacts on local governments** in each of the three forecast cases are presented in abbreviated summary form in the following table:

Summary of Projected Economic Impacts
By Case for Selected Years

	All Counties[1]		
	1995	2000	2005
Base Case			
Total Employment Impact of Mining	1,423[2]	1,469	1,253
Total Job Increase/(Loss) from 1995	--	46	(170)
Potential Population Increase/(Decrease) Attributable to Mining	--	115	(425)
Upside Case			
Total Employment Impact of Mining in County	1,423[2]	1,543	1,486
Total Job Increase/(Loss) from 1995	--	120	63
Potential Population Increase/(Decrease) Attributable to Mining	--	300	157
Downside Case			
Total Employment Impact of Mining in County	1,423[2]	1,319	1,146
Total Job Increase/(Loss) from 1995	--	(104)	(277)
Potential Population Increase/(Decrease) Attributable to Mining	--	(260)	(692)

(1)All counties include Big Horn, Rosebud, Richland, and Musselshell
(2)Musselshell suppressed for confidentiality of single mine in county

With regard to **public policy changes**, it is the Study Team's opinion there is little the State can do by way of changes in public policy to effect positive change in the coal industry in the near-term, for the following reasons:

- The State's problems are perceptual to some degree, with both producers and consumers believing that:
  - the State does not like its coal industry
  - there is too much political uncertainty in the State's policies
- A reduction in the State's coal severance tax would have little material impact on the expansion of markets for Montana coal other than to foster a more positive perception of the State's attitude toward the industry.
- Any reduction in the resource taxes imposed on the State's coal production would almost certainly trigger a similar reduction by Wyoming in order to allow mines in the Southern Powder River Basin to maintain their competitive position and their current market share.
- The evolution of coal markets available to the State's producers is well beyond the State's ability to influence, since

- the Burlington Northern Santa Fe Railroad essentially determines Montana's markets, and
- there are a number of critical factors, most notably deregulation of the electric utility industry, which will be the primary determinants of the direction of future coal markets, in the U.S. as a whole and for Montana producers in particular.

After completion of its investigation and the analysis and evaluation of the forecast cases, the following **recommendations** concerning public policy were developed:

Issues Having a Direct Impact

- **Coal severance tax -** while a reduction in the State's coal severance tax rate would lower production costs to a degree, the Study Team does not believe this would translate into increased production since it is likely that Wyoming would follow suit and that the BNSF railroad would be in a position to capture the amount of reduction in its transportation rates. The Study Team does believe, however, that even a modest reduction in the tax rate would send a positive message that the State is aware of industry's problems and is attempting to be supportive, and for this reason, is worthy of consideration. It is noted by the Study Team that any increase in the severance tax would have a devastating impact on future Montana coal sales by reinforcing the negative perception that producers and consumers currently hold.
- **Domestic market development -** use the influence of the State's elected officials to develop high-level relationships with their counterparts and political contacts in key market areas which could open avenues of communication regarding the increased utilization of Montana coal, particularly in the Midwest, North Central, and Pacific Northwest regions and in Texas.
- **Export market development -** This is of particular importance to the newly-developed Bull Mountain Mine, although other Montana mines should also be included since there has been some effort by the producers in this direction. The form of trade assistance envisioned is similar to that which the State would provide for its other industrial products.
- **Conduct of administrative and regulatory activities -** educate the State's administrative personnel responsible for permitting, environmental compliance, and taxation issues as to the technical and business fundamentals of the coal industry, with the objective of fostering improved communications and a better environment of mutual trust, cooperation, and problem solving.

Issues Having an Indirect Impact

- **Publicizing the coal industry -** To demonstrate its support of its coal industry, the State could take modest steps toward publicizing the significance of Montana's coal mines and coal resources through a variety of measures. This could comprise inclusion in the State's promotional literature and tourist publications, and encouraging people to visit the overlooks and/or obtain the literature which several of the mines provide.
- **Support of Tongue River Railroad** - While the Study Team recommends this be done, it should be recognized that several issues exist which will affect the timing of the railroad's development, including those related to the timing of market growth from the area to be served by the railroad and the lead time which would be required to bring the project to completion once a decision was made to construct.

Notwithstanding the recommendations and discussions presented in the Study, one of the overwhelming conclusions of the Study is that many of the numerous forces which will affect the future of Montana's coal industry are outside the control of either the State or the producers themselves, and accordingly, there are only limited actions which can be taken by either to increase production or to expand markets significantly.

STAGG ENGINEERING SERVICES, INC.

David R. Hammond (plc)
David R. Hammond
Principal Mineral Economist

Alan K. Stagg
Alan K. Stagg
President - Principal Economic Geologist

April, 1996

TEXT

SECTION I - INTRODUCTION

A. ORGANIZATION OF REPORT

This report contains Volume II of a two-volume report presenting the results of an assessment of the future market demand for Montana coal production and of the degree to which state-level public policies influence the competitiveness of Montana's coal in both domestic and international markets (the "Study").

Volume I of the Study — *Results of Investigation* — provides detailed discussions of the wide variety of issues which affect Montana coal and the results of the Study Team's analysis of these issues, and presents a series of forecasts regarding future coal production in Montana and its fiscal and economic impact on state and local governments.

Volume II — *Executive Summary, Conclusions, and Recommendations* — summarizes the Study, presents the Study Team's observations and conclusions, and presents recommendations concerning public policy issues.

B. DESCRIPTION OF STUDY

The Study was prepared for the Montana Department of Commerce and the Office of the Governor, Economic Development Office (the "State"). The objective of the Study is to identify, to the extent possible, the competitive constraints and/or advantages current public policy is placing on the State's coal producers, and to determine whether such policies are likely to hinder or promote development and extraction of the State's coal resources in the rapidly changing and intensely competitive markets anticipated in the future. The State's primary concerns are twofold:

- the impact its policies will have on future tax revenues for the Coal Severance Tax Trust fund, the Coal Gross Proceeds Tax which is distributed to local governments, and the Resource Indemnity and Ground Water Assessment Tax Fund ("RIGWAT"), and

- the impact that either diminished or expanded coal development and production would have on employment and on the demand for goods and services in the counties in which such changes occurred.

Information gathered in the Study will serve as input to policy-makers for possible modifications to public policies to ensure the optimum utilization of the State's coal resources and maximum economic and environmental benefits to the State's citizens.

The scope of work requested by the State in the Study consists of the following tasks:

Task 1: Describe the current state of the Montana coal industry, including operating mines, key competitors, development projects, markets served, characteristics of the transportation system for moving coal to those markets, and the business and regulatory climate in which the industry is operating.

Task 2: Describe the current regulatory requirements, taxation statutes, and royalty and severance burdens facing Montana coal producers, and identify the extent to which these retard development and extraction of Montana's coal resources.

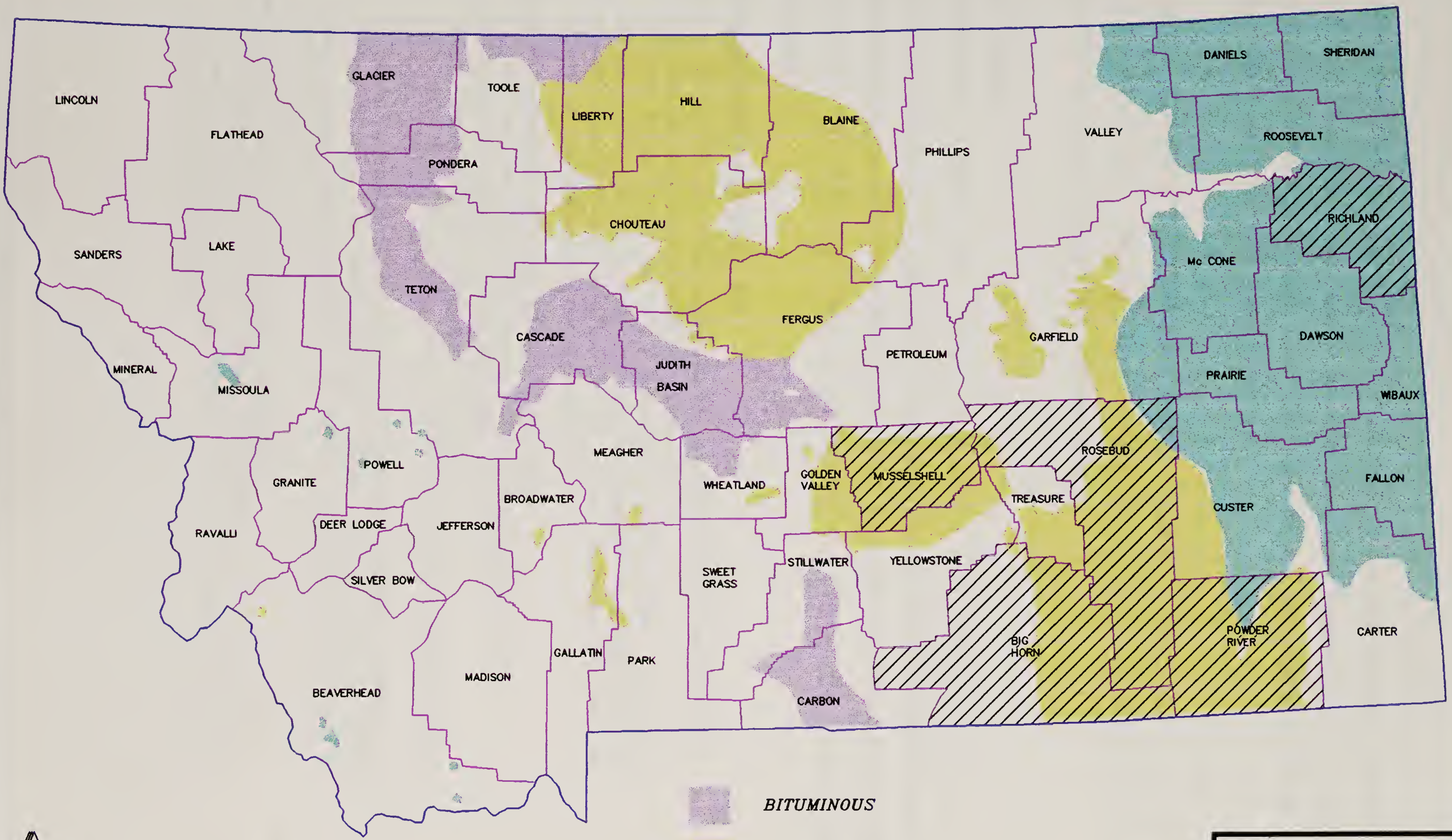
Task 3: Identify and describe the critical issues which will drive Montana's coal production in the future and the resulting fiscal and economic impacts at the state and local level, and render opinions concerning the resolution of these critical issues and the extent to which Montana's coal production will be affected.

Task 4: Develop base, upside, and downside cases for future Montana coal production and pricing, and from these, project anticipated state and county tax revenues, industry employment levels, economic impacts, business multiplier effects, and governmental support requirements for the closure of existing mines and the development of new mines.

Task 5: Develop observations and conclusions regarding future Montana coal development and production, and make recommendations relating to public policy issues which could enhance the competitive position of the State's coal industry.

The Study Area consists of the counties of Big Horn, Musselshell, Powder River, Richland, and Rosebud (Figure 1). The forecast period for the Study is the ten-year period 1996 to 2005 (the "Study Period").

While not envisioned in the original design of the Study, the multiplicity of issues affecting the Montana coal industry and the background necessary to place the Study in



🟪 BITUMINOUS

🟨 SUBBITUMINOUS

🟦 LIGNITE

▨ STUDY AREA

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FIGURE 1
STUDY AREA

APRIL 1996

perspective to those readers with little or no knowledge of the coal industry, the Study Team determined that the results of the Study did not lend themselves to a single, concise volume. Accordingly, Volume I was designed for use as a reference, either in conjunction with Volume II or as a stand-alone work.

The Study was authorized by the State in the third quarter of 1995, with the major portion of the investigation and analysis conducted during the fourth quarter of that year. The effective date of the Study is January 1996.

C. STUDY TEAM

Stagg Engineering Services, Inc. ("Stagg Engineering") was selected as the lead consultant for the Study. BBC Research & Consulting was retained as a subcontractor by Stagg Engineering to assist in assessing the social, economic, and fiscal impacts of the Study issues. The following persons from the two firms participated in the Study (the "Study Team"):

Stagg Engineering Services, Inc.

Alan K. Stagg, R.P.G. - Principal Economic Geologist and Project Manager
- B.S. Degree - Geology, University of Tennessee
- 32 years experience in the mining industry, the major portion of which has involved all aspects of the evaluation of coal properties and operations, the economic analysis and appraisal of coal mines and properties, and the design and management of specialized studies,

David R. Hammond - Principal Mineral Economist
- B.S. Degree - Geological Engineering, South Dakota School of Mines
- M.S. Degree - Geological Engineering, University of Utah
- M.B.A. Degree - Finance, University of Denver
- Currently in course of study for Ph.D. in mineral economics, Colorado School of Mines
- 22 years experience in the mining and petroleum industries, including 10 years in the U.S. and international coal industry, with an emphasis on the geologic and financial evaluation of mining operations, and analysis of mineral commodity markets

Joe G. Norris, C.P.G. - Principal Mine Geologist
- B.S. Degree - Geology, Eastern Kentucky University
- 19 years experience in the mining industry, with an emphasis on the geologic evaluation of mineral deposits

E. Gaye Hager - Project Administrator

- 15 years experience in the coal mining industry, including operational analysis, cost modeling, detailed research, and project manager

<u>**BBC Research & Consulting**</u>

Douglas L. Jeavons - Lead Economic Analyst

- B.A. Degree - International Affairs, Lewis-Clark College
- M.A. Degree - Economics, University of Colorado
- 8 years experience in regional economic analysis, natural resource, and environmental economic evaluations. Project experience throughout the Rocky Mountain region

Edward F. Harvey - Economic Analysis Director

- B.A. Degree - Economics, University of Denver
- M.S.B.A. Degree - Economics, University of Denver
- 22 years experience in mineral, water and natural resource economics and public finance
- BBC Managing Director, with project leadership experience throughout the west and experience related to coal mining in Montana, Wyoming, Colorado, and New Mexico

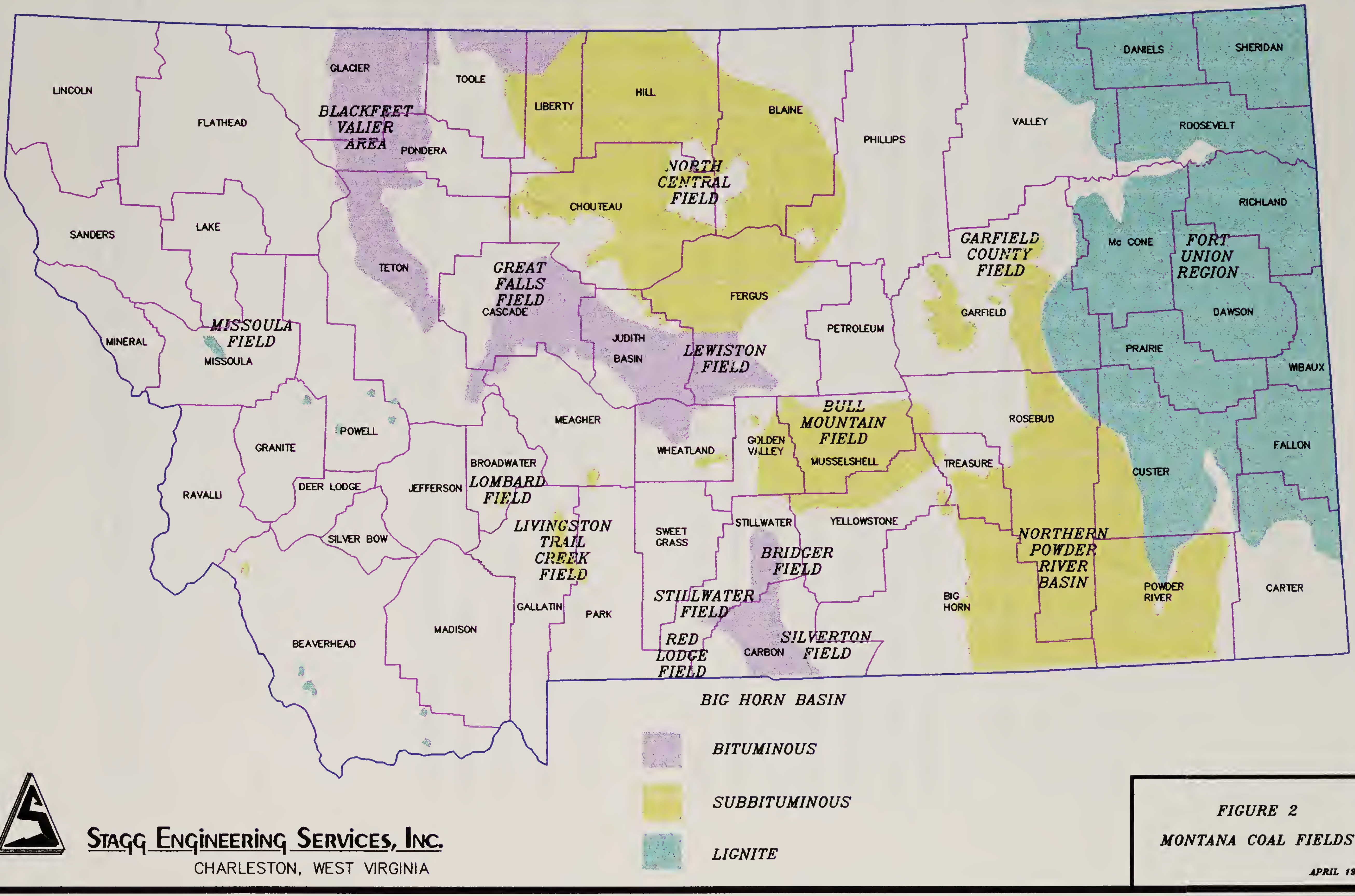

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FIGURE 2
MONTANA COAL FIELDS
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SECTION II - THE MONTANA COAL INDUSTRY

A. PRODUCTION HISTORY

Fourteen coal fields are recognized in Montana, constituting about 35 percent of the State's total land area (Figure 2). Total coal resources[1], as estimated by the U.S. Geological Survey, are 472 billion tons, of which some 292 billion tons are classified as identified resources, and 180 billion tons are estimated to occur in unmapped areas.

The first mining of any importance in the State was in 1867, with early production utilized primarily by railroads and smelters, and for domestic production. All mining during the late 1800's and early 1900's was by underground methods. Surface mining was developed at Colstrip in the 1920's, with only modest production experienced during the next several decades. The major expansion of Montana's coal industry began in the 1970's, with the development of several surface mines in the southeastern portion of the State in the northern portion of the Powder River Basin. The State's production history is presented in Figure 3.

Six surface mines and one underground mine are currently producing in the Study Area (Figure 4), with five of the surface mines producing subbituminous coal from the Powder River Basin and one producing lignite from the Fort Union Region. Virtually all production is shipped on a raw basis for consumption by utility and industrial consumers. The one underground mine began production in December 1995, and had not reached its design capacity during the Study.

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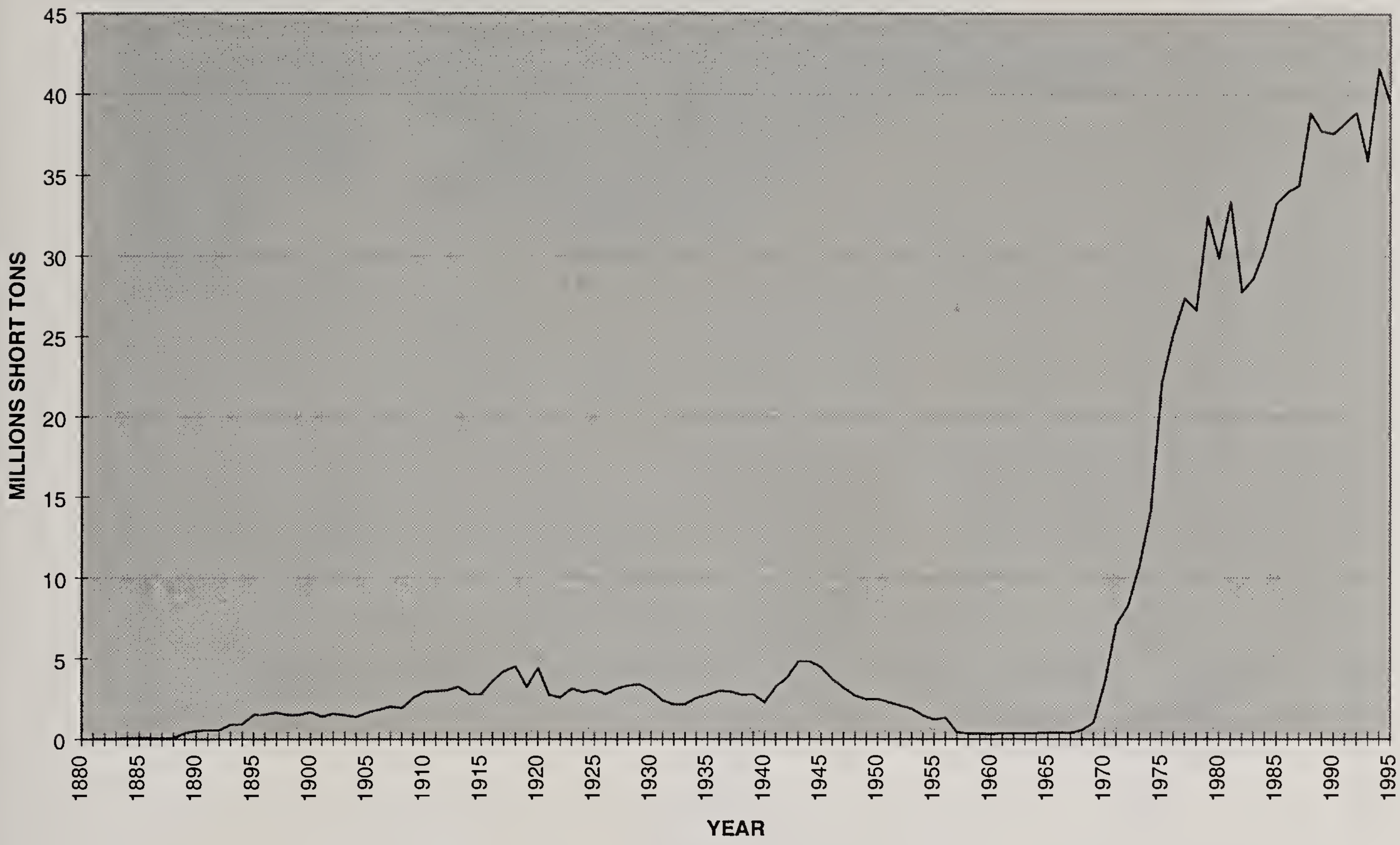
[1] The term "resources' differs from the term "reserves', with resources representing tonnage which can be identified as being present but without any qualification concerning the economics of mining it, while reserves by definition is that portion of the tonnage which is present which can be economically recovered.

FIGURE 3 - PRODUCTION HISTORY OF MONTANA MINES

(1880 - 1995)



Source: "History of Coal Mining in Montana"

B. CONSUMER DECISIONS REGARDING MONTANA COAL UTILIZATION

The fundamental point to remember in assessing a coal-producing region's ability to retain existing markets and to acquire new market share is that to the end user, the procurement and combustion of any fuel is a cost comprised of three essential components:

- the price paid to the fuel producer
- the cost of moving the fuel from the point of production to the point of consumption
- the costs incurred in the actual combustion of the fuel and disposal of resulting waste products

In assessing the market potential for existing Montana coal producers, the single most important issue is the apparent limitation place upon the market reach of Montana

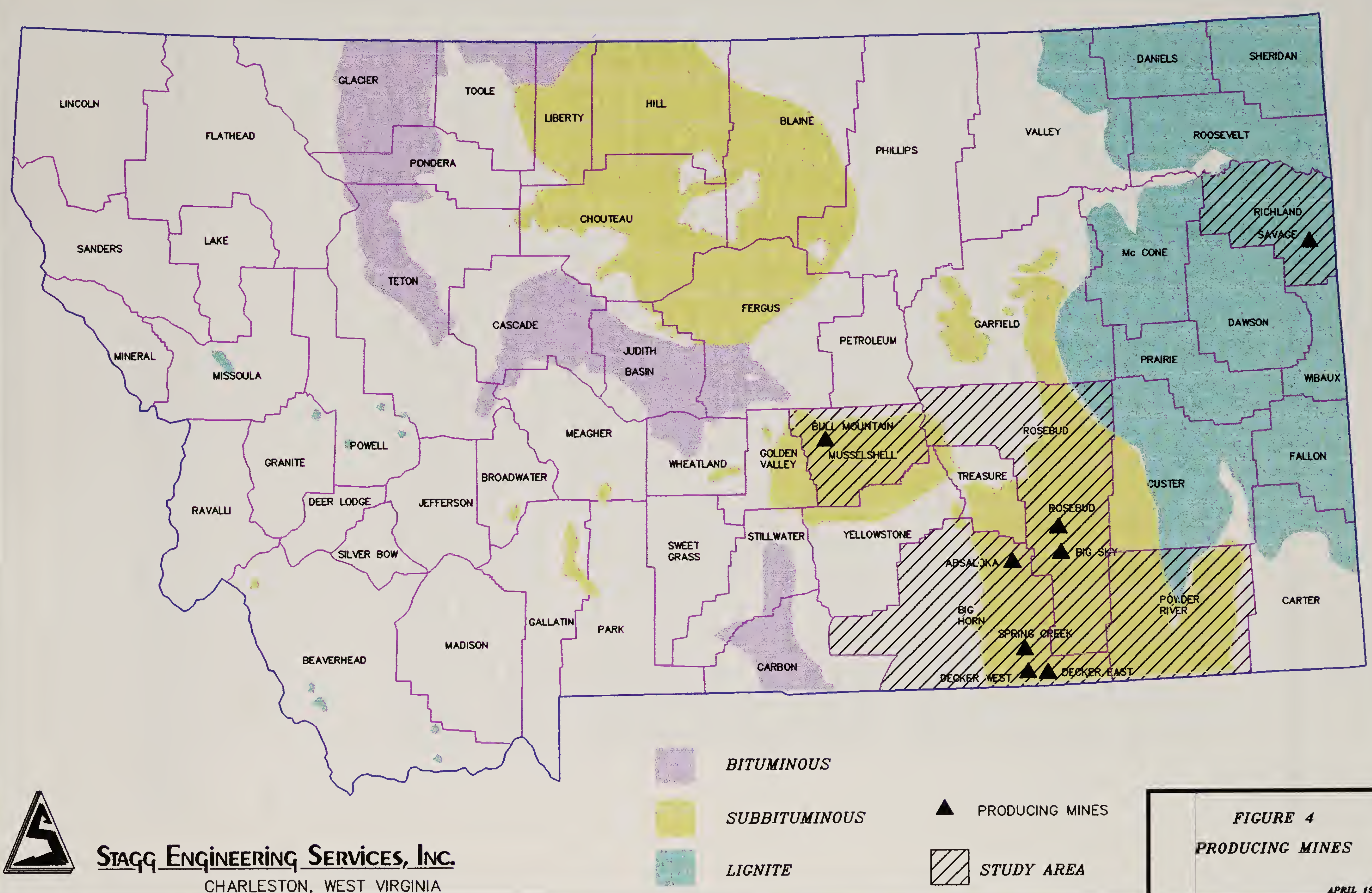


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FIGURE 4
PRODUCING MINES

APRIL 1996

production. The reasons for this limitation are complex, but generally are the result of three factors:

- **Geology and geography -** Geography places mines in the Northern Powder River Basin[2] at a competitive disadvantage to competitors for a large segment of the North American coal market, primarily from a transportation perspective, while the geologic environment is a significant determinant of coal quality and production costs. Quality issues of significance are the non-compliance quality of a portion of the coal currently produced in the NPRB and the high sodium content of the ash from a portion of the region's production. As a result of its location, access from the NPRB to those regions of the North American electricity generating market which have experienced significant growth during the last 25 years — the Midwest, Southeast, South Central, and Southwest — requires that coal must pass through competing coal fields which can have lower production costs, more attractive fuel attributes, and/or much shorter and less costly transportation options.
- **Transportation -** The region is served by a single railroad, the Burlington Northern Santa Fe ("BNSF"), formed in 1994 by the merger of the Burlington Northern and Santa Fe railroads. The power of the monopoly enjoyed by the BNSF has increased since deregulation of the U.S. rail industry in the early 1980's, in that transportation rates are now negotiated on a private basis between the carrier and the consumer, rather than by regulated tariff. Given the ability of the BNSF to manage the cost structure of its various alternative routes and its knowledge of production costs at competing mines, the carrier has considerable ability to influence the success of a potential suppliers' bid and to capture any economic rents which may be available in a particular sales opportunity. As a consequence, it is fair to say that the BNSF has greater power to influence the development of Montana's coal industry than have the individual producers or the State's government.
- **Consumer attitudes -** A reluctance, and in some instances, an aversion, by a segment of the market to purchase Montana coal is due to a perception that, at least historically, the State is not supportive of its coal industry and is unpredictable in its public policies involving natural resource extraction. This attitude is due in large part to Montana's imposition of a nominal 30 percent severance tax in the mid-1970's, although other policy initiatives, such as the frequency of changes by the State in the tax code during the past 20 years, have contributed as well.

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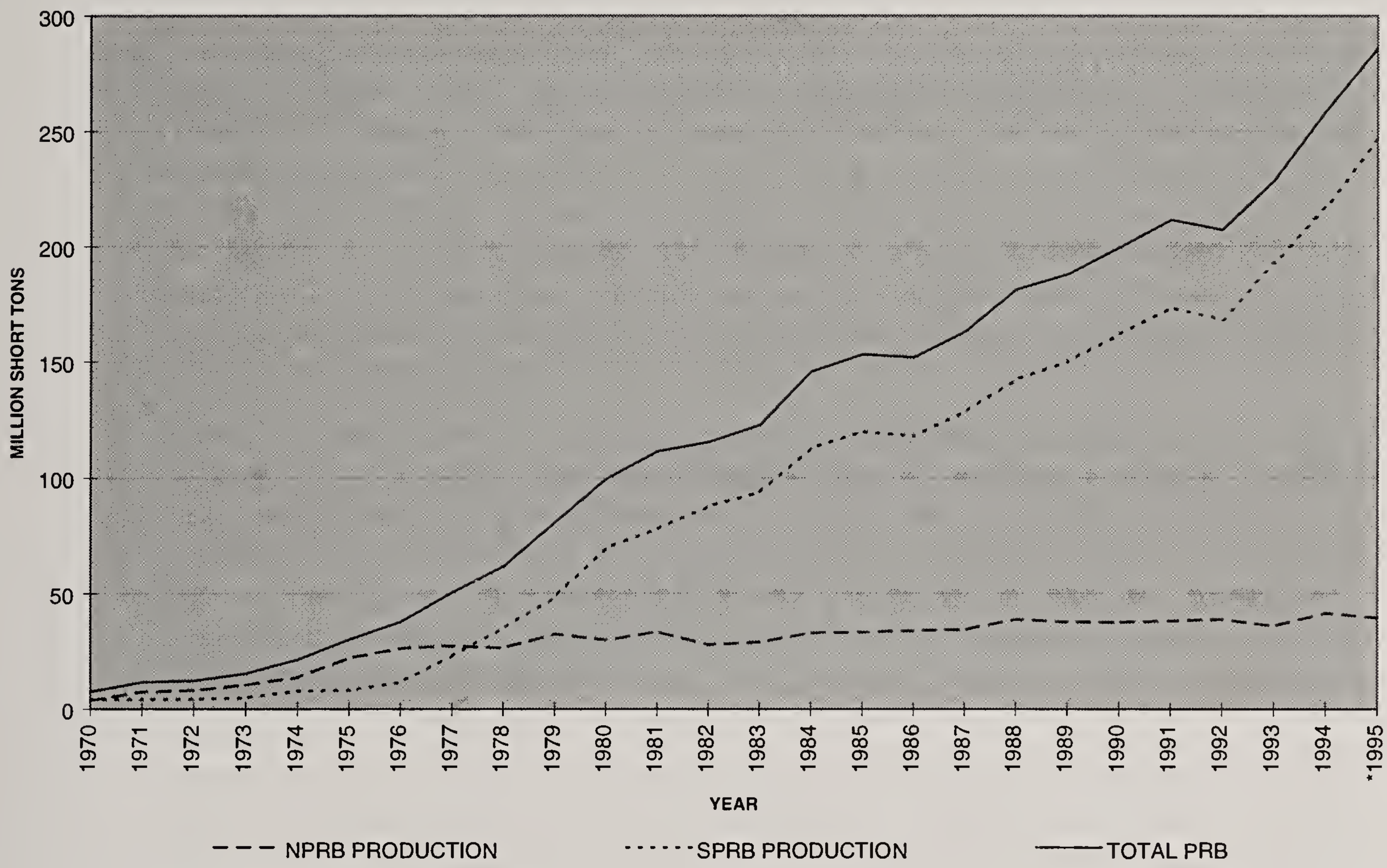
[2] In the Study the terms "Powder River Basin" and "PRB" are used interchangeably. For that portion of the Powder River Basin lying in Montana, the terms "Northern Powder River Basin" and "NPRB" are used interchangeably, while for that portion of the Powder River Basin lying in Wyoming the terms "Southern Powder River Basin" and "SPRB" are used interchangeably.

It is worth noting that the dramatic increase in the State's severance tax in 1975 gave the SPRB an enhanced competitive position and incentive to bring new and larger mines into production, in spite of the fact that mines in Montana were already established and producing a more valuable product. The net result of this phenomenon is illustrated in Figure 5, which shows the rapid expansion of SPRB production compared to the relatively flat growth for the NPRB.

FIGURE 5 - HISTORIC POWDER RIVER BASIN PRODUCTION BY REGION
(1970 - 1995)



*Estimated SPRB and PRB production for 1995
Source: US DOE/EIA

C. CURRENT AND PLANNED MINES

Brief profiles of the six surface mines operating in the State are presented below, with a more detailed discussion of each presented in Volume I - Appendix B.

Powder River Basin

- **Absaloka Mine -** This mine, which is jointly owned by Westmoreland Coal Company, Inc., Morrison-Knudsen Company, Inc., and Penn Virginia Corporation, is located in Big Horn County. The mine, which opened in 1974,

produced a reported 4.4 million tons in 1995. All production is non-compliance, subbituminous steam coal which is burned at facilities outside the area. The mine utilizes a dragline as its primary overburden removal equipment. The operation reports around 684 million tons of reserves, all of which are leased from the Crow Tribe.

- **Rosebud Mine -** This mine, which is owned by a subsidiary of Montana Power Company, is located in Rosebud County. The mine, which opened in 1968, produced a reported 11.3 million tons in 1995. All production is non-compliance, subbituminous steam coal, with the major portion burned at the Colstrip power station located at the mine. Production is also shipped to consumers outside the region, although this practice is declining at present. The mine utilizes as many as four draglines as the primary overburden removal equipment. The operation reports around 320 million tons of reserves, with an estimated two-thirds controlled by federal leases and the remainder by leases with private landowners.
- **Big Sky Mine -** This mine, which is owned by a subsidiary of Peabody Holding Company, is located in Rosebud County. The mine, which opened in 1969, produced a reported 4.7 million tons in 1995. All production is non-compliance, subbituminous steam coal which is burned at facilities outside the region. The mine utilizes a dragline as its primary overburden removal equipment. The operation reports around 25 million tons of reserves, with roughly two-thirds controlled by federal leases and the remainder by leases with private landowners
- **Spring Creek Mine -** This mine, which is owned by Kennecott Energy Company, is located in Big Horn County. The mine, which opened in 1980, produced a reported 8.5 million tons in 1995. All production is compliance, subbituminous steam coal which is burned at facilities outside the region. The mine utilizes a dragline as its primary overburden removal equipment. The operation reports around 180 million tons of reserves, with virtually all controlled by federal leases.
- **Decker Mine -** This mine, which is jointly owned by Kennecott Energy Company and Kiewit Coal Properties, Inc., is located in Big Horn County. The mine, which opened in 1973, produced a reported 10.3 million tons in 1995. All production is compliance, subbituminous steam coal which is burned at facilities outside the region. The mine has two production centers, designated East Decker and West Decker, and draglines are the primary overburden removal equipment. The operation reports around 330 million tons of reserves, virtually all of which are controlled by federal leases.

Fort Union Region

- **Savage Mine -** This mine, which is owned by MDU Resources Group, Inc., is located in Richland County. The mine, which opened in 1958, produced a reported 300 thousand tons in 1995. All production is non-compliance lignite, with the major portion burned at the Lewis & Clark power station located at the mine and the remainder at area industrial facilities. The mine utilizes a dragline as its primary overburden removal equipment. The operation

reports around 23 million tons of reserves, with around two-thirds controlled by leases with private owners and the remainder controlled by federal leases.

A brief profile of the one underground mine operating in the Study Area is presented below, with a more detailed discussion presented in Volume I - Appendix B.

Bull Mountain Field

- **Bull Mountain Mine No. 1 -** This mine, which is owned by Mountain, Inc., is located in Musselshell County. The mine, which has been in an idle development state for several years, began production again during the fourth quarter of 1995. Production on a raw basis will likely be non-compliance, with compliance coal produced with washing. Production may be shipped to a power station within the region, to power stations outside the region, and to the export market. The mine is using a continuous miner and a shuttle car section for its initial production. The operation reports around 180 million tons of reserves, the major portion of which is controlled by lease with private landowners.

New mines with the potential for development range from a surface mine for which permits have been granted, to several mines in the conceptual stage, to ongoing efforts to attract operators and/or venture capital to areas with development potential. These projects are summarized below, with detailed discussions presented in Volume I - Appendix C.

Powder River Basin

- **North Ashland Project -** This property, which is controlled by Peabody, is located in Rosebud County to the east of Peabody's Big Sky Mine and to the south of Montana Power's Rosebud Mine. One factor likely to affect a decision to develop this surface mine is the fact that production would be from the Rosebud coal bed, which is not of compliance quality. If Peabody elects to develop this mine, it would likely be as a replacement to the Big Sky Mine, which has no more than five years life remaining. The time frame within which this mine might be developed is the period 1999 to 2001.
- **Montco Mine -** This proposed surface mine, which is located on the east side of the Tongue River in Rosebud County, had its initial permit issued by the State in 1984, and its federal mine permit issued in 1985. Both permits were subsequently appealed by the Northern Plains Resource Council, and both were subsequently upheld. Litigation is currently in progress between the State and the project's developer Westco Resources, Inc. over renewal of the State's permit. The development of this mine is dependent upon the construction of rail access with two alternatives existing — the proposed

Tongue River Railroad from Miles City or extension of the existing spur line of the Burlington Northern Santa Fe from Colstrip. The likely time frame within which development of this project might occur is the period 2003 to 2008.

- **GNP Otter Creek Project -** Great Northern Properties, Ltd., the successor-in-title to Meridian Minerals Company's coal lands throughout Montana, is conducting preliminary evaluations of the feasibility of developing surface mines on various blocks of coal in the Knobloch coal bed it owns in the Otter Creek area in Rosebud and Powder River counties to the east of the Tongue River. As with the Montco Mine, the development of this mine is dependent upon the construction of rail access under one of the two alternatives defined above. The likely time frame within which development of the GNP Otter Creek project might occur is the period 2003 to 2008.
- **CONSOL Otter Creek Project -** CONSOL, Inc. controls a substantial tonnage of coal in Powder River County in the vicinity of the Tongue River with surface mine development potential. As with other proposed mines in the vicinity, development would be dependent on the availability of rail access, either by the proposed Tongue River Railroad or by the extension of the BNSF spur at Colstrip. The likely time frame within which development of this project might occur is the period 2003 to 2008.
- **Youngs Creek Project -** This project, which was begun by Shell Mining on the southeastern portion of the Crow Indian Reservation in Big Horn County, was not pursued subsequent to the sale of Shell Mining's coal interests to Zeigler Coal Holding Company in 1992. The lease held by Shell Mining reverted to the Crow tribe, with privately-held lands and rights-of-way being conveyed to Zeigler. The Crow initiated a round of solicitations for proposals in mid-1995, with little apparent progress towards substantive activity. The likely time frame within which development of this project might occur is the year 2005 or beyond.
- **Northern Cheyenne Reservation Project -** The Northern Cheyenne Tribe solicited expressions of interest and subsequently negotiated a preliminary development agreement involving a substantial body of Knobloch coal lying on the eastern portion of the Reservation in Rosebud County. As with other proposed projects along the Tongue River, the development of the Northern Cheyenne project would require development of rail access, either by the proposed Tongue River Railroad or the extension of the BNSF spur at Colstrip. The likely time frame within which the development of this project might occur is the year 2010 or beyond.
- **Crow Indian Reservation Tract II -** A second surface mine in the vicinity of the Absaloka Mine in Big Horn County has long been a hope of the Crow tribal administration, and a variety of solicitations have been made during the past several years. Given the fact the coal is not of compliance quality and the extensive reserve base which remains at Absaloka, there is little likelihood that such a mine will be developed within any meaningful time frame.

Fort Union Region

- **Circle West Lignite Project -** While there has been considerable discussion for some years concerning the construction of an electric generating station and the development of a surface mine in McCone and Garfield counties to serve it directly, such development appears unlikely before the year 2010 or beyond.

D. FISCAL AND REGULATORY CONSTRAINTS

Coal mining is subject to a variety of fiscal and regulatory constraints which have a significant influence on operating costs and on the ability to compete with production from other states. For a portion of these, the framework in which mines in other states operate is similar, and the overall impact on competitiveness is not greatly different. In some instances, however, the fiscal and regulatory constraints have a significant impact on competitiveness, as is the case with the State's coal severance tax. The major fiscal and regulatory issues affecting the State's coal mines are summarized below.

- **Production royalties** - The vast majority of production from the State's coal mines is from reserves which are leased by the mining companies, and for which royalties based on production are paid. An insignificant amount of reserves is actually owned by the mining company or an affiliate. While royalty rates vary among the various types of ownership — federal, state, Indian, and private — a typical rate is 12.5 percent of the selling price of the coal for surface mines and 8.0 percent for underground mines
- **Federal Excise Taxes** - Two taxes on the production of coal are levied by the federal government:
  - a **"black lung tax"** instituted under Title IV of the Federal Coal Mine Health and Safety Act of 1969, with a rate of 4.4 percent of the gross selling price of the coal, not to exceed $0.55 a ton for surface mines and $1.10 a ton for underground mines.
  - a **reclamation tax** instituted under Section 402 of the Surface Mining Control and Reclamation Act of 1977, with a rate of 4.5 percent of the gross selling price of the coal less the cost of trucking, not to exceed $0.35 a ton for surface mines and $0.15 a ton for underground mines.
- **Montana Resource Taxes** -The State of Montana has placed heavy reliance on taxation of natural resource extraction as a source of government funding. Resource taxes fall into two general categories — state severance and license taxes, collected for state-wide purposes, and a modified ad valorem tax collected by the State for distribution to local governments. Taxes specific to the coal industry in the former category are the Coal Severance Tax and the Resource Indemnity and Ground Water Assessment Tax

("RIGWAT"). Local taxes pertaining to the coal industry are embodied in a single assessment — the Coal Gross Proceeds Tax.

- **Coal Severance Tax** - The severance tax imposed on Montana coal producers has had a long, and at times confusing, evolution. Prior to 1975, production was taxed via a license tax levied through fixed cents-a-ton schedules according to the extraction method employed and the heat content of the coal. Until mid-1973, the rates were the same for both surface and underground mines, in the range of 4 to 10 cents a ton, depending on heat content. In mid-1973, an adjustment was made to rates for surface mines with the new rates ranging from 12 to 40 cents ton, also depending on heat content.

  This tax structure was short-lived, with the 1975 State legislature introducing a severance tax computed as a percentage of the mine-mouth selling price as the alternative to the flat rate tax on a tonnage basis, with the higher amount of the two methods to comprise the tax. The new tax methodology, which took effect during the 1975 - '76 fiscal year, established a severance tax burden which was the highest of any U.S. coal-producing state. A nominal 30 percent tax rate was applied to a "Contract Sale Price" ("CSP") defined by statute. The CSP is defined as the gross price received for the coal at the mine less all federal and state production taxes. Royalties paid on production are included in the CSP, except that royalties paid to the U.S. government, the state of Montana, or to Indian tribes are capped at 15 cents a ton. It should be noted that the statutory specifications as to how the CSP is to be derived require complex iterative calculations in order to determine the correct tax due.

  During the succeeding 12 years, the revised severance tax placed a substantial burden on Montana coal producers, and by the mid-1980's they became increasingly concerned about the negative impact the high severance tax was having on the growth of Montana's surface mine production, particularly when compared with the neighboring SPRB in Wyoming. The efforts of the Montana Coal Council and the State legislature led to the enactment of a "New Coal Production Incentive Tax Credit" ("NCPITC") in 1985, by which a coal mine operator received a one-third reduction from the statutory rate for incremental production sold during the 1985 and 1986 calendar years. A more significant change occurred during the 1987 legislative session when a gradual lowering of the tax rates on surface mined coal was implemented, conditioned on the achievement of a targeted state-wide coal production level of 32.2 million tons during fiscal year 1988. Severance tax rates for underground mines were to remain at the 3 and 4 percent rates specified in the 1975 legislation.

  The 32.2 million ton target was achieved, triggering a series of modifications in the severance tax rate such that by mid-1991, the nominal rate was reduced to 15 percent for surface mines producing typical subbituminous coals. The rate on underground subbituminous and bituminous coals remained unchanged at 4 percent of the CSP rate

established in 1975. When applied to current coal selling prices, these rates translate into effective rates on the selling price FOB the mine of around 10 percent for surface mines and 3 percent for underground mines.

It should be noted that as a result of the sovereignty of Montana Indian tribes, coal produced from reservations is not subject to State severance taxes. Experience has shown that the tribes will substitute their own severance or similar tax, however, and, as a general rule, at rates which replicate the then-current State policy.

During the 1995 legislative session, an exemption was enacted for coal supplied by Montana mines to processing plants in the State designed to enhance coal quality. Under the terms of this provision, coal produced for this purpose is not subject to severance tax payments up to an annual total of two million tons. This exemption took effect during the 1995 fiscal year and at present only coal supplied by the Rosebud Mine for processing at the Rosebud SynCoal plant qualifies for the exemption.

- **Gross Proceeds Tax** - The State has long recognized the difficulties inherent in valuing unmined minerals when assessing property taxes at the county level using standard approaches to real property appraisal, and the State's first Constitution established an assessment methodology based on the value of the product produced in mining. Prior to 1975 this involved a "net proceeds" concept, by which the annual gross revenue from the sale of the mined product less certain deductions was assumed to be the value of property. The regular mill levies of the taxing district were then applied to this value.

  Changes in the way coal mining properties were assessed began with the 1975 legislative session, when a "gross proceeds" approach was adopted. At this time the taxable value of surface mines was set at 45 percent of the contract selling price and the taxable value for underground mines was set at $33^1/_3$ percent. This methodology continued until a 1989 Special Session of the State legislature. At that time a flat tax rate of 5 percent of gross proceeds, again defined as the CSP specified for severance tax calculation, was established in lieu of the individual mill levies imposed by the local taxing jurisdiction. Revenues collected under this flat tax are distributed proportionately to the taxing jurisdictions in which production occurred during the tax year. This change became effective for all coal production after December 31, 1988.

  The initial 5 percent rate continues in effect, and at current spot market prices the effective rate for subbituminous coal is approximately 3.2% of the FOB mine price. As with the coal severance tax, the gross proceeds tax does not apply to coal on Indian reservations. The current practice of tribal government is to substitute its own tax at an equivalent rate.

- **Resource Indemnity and Ground Water Assessment Tax** - Beginning with the 1973 fiscal year, all producers of non-renewable resources in Montana became subject to a Resource Indemnity Trust Tax ("RITT"), established by the legislature to compensate Montana's citizens for the

depletion of the State's natural resource patrimony. Interest from the trust fund was to be used for environmental protection, reclamation, and development of renewable resources. The rate of taxation initially was set for all resource commodities at $25.00 plus 0.5 percent of the gross value of the resource produced. As with other taxes, gross value was defined as the CSP.

In 1991 the Legislature changed the name of the RITT to the Resource Indemnity and Ground Water Assessment Tax ("RIGWAT") to better reflect the use of interest from the trust fund to develop Montana's ground water resources. The uniform rate of 0.5 percent of CSP was also modified at that time, with rates established for individual classes of resources. The rate for coal production was lowered to 0.4 percent of CSP, the level at which it currently remains. This rate represents approximately 0.25 percent of total mine price at current spot market prices. All Montana coal producers, including those situated on Indian lands, are subject to this tax.

A feature of the trust fund established with RIGWAT revenues is that once the fund balance reaches $100 million, future collections and earnings can be appropriated by the Legislature and used for other purposes at the Legislature's discretion. The total collected through the end of 1994 amounted to approximately $20.7 million.

- **Other State and Local Taxes** - In addition to the resource taxes discussed above, a variety of general business taxes are also levied against coal producers. These taxes are summarized below.
  - **Corporation License Tax** - This tax, which is in effect an income tax, is assessed on corporations at 6.75 percent of the direct net income derived from Montana sources. Qualified corporations may elect to pay an alternative tax of 0.5 percent of gross sales in Montana during the tax year.
  - **General Property Tax** - This tax is comprised of the aggregate of state, county, city, and school rates fixed annually to meet state and local budgets, and a tax on the market value of real and personal property which varies according to the type of property.
  - **Other Taxes** - Other taxes of a general business nature which are assessed include fuel taxes and motor vehicle sales tax.
- **Freight Line Company License Tax** - Montana's tax code contains special provisions for the assessment of property taxes on railroads, since they typically operate in multiple jurisdictions both within and without the State, and since they possess complex groups of assets such as rights-of-way, roadbed and track, and rolling stock. Particular problems are encountered with locomotives and rail cars operated in multiple counties and states, particularly when these assets are owned by the shipper rather than by the railroad. Such "private railroad cars" are designated as being owned by "railroad car companies" and property taxes on these assets are centrally assessed by the Department of Revenue.

Prior to 1992, taxes on non-railroad owned freight cars were through the "Private Car Line Tax", consisting of a 5.5 percent levy on gross revenues attributable to each car over the tax year. In 1992 several private railcar owners whose cars periodically traveled in Montana filed suit, claiming the tax as implemented violated Section 306 of the Staggers Act prohibiting discriminatory taxes against railroad equipment.

In August 1992, prior to any rulings in the suit, the State legislature repealed the gross receipts tax and replaced it with a Freight Car Tax, determined as a true ad valorem tax. The legislation also made the revised tax retroactive to 1990. The tax calculation methodology specified in this statute involves first determining the depreciated or current market value of the Railcar Company's entire car fleet. This value is then multiplied by the percentage of total annual car miles the fleet travels within the State to establish the asset value allocatable to Montana. The tax rate applied to the allocated value is the average statewide rate of taxation on commercial and industrial property. The statute language does permit the State Department of Revenue to adopt, by administrative rule, formulas for determining the fleet value amount proportionate to Montana.

The change from the gross proceeds to the property tax methodology had the effect of increasing private car levies on some Montana coal shippers by as much as 250 percent. In 1993, eight private car-owning companies initiated legal action to force the Department of Revenue to change the way fleet value is allocated to Montana, claiming that the Department's approach does not accurately reflect the amount of time during the year that the shipper's cars are resident within the State. The standard of presence considered as more accurate by the plaintiffs is the "equivalent car method", which brings into the value allocation calculation the actual amount of time the cars spend traveling in the State by incorporating the speed of car movements.

While the lawsuit was moving towards an expected 1996 hearing in Federal District Court in Billings, efforts were made during the 1995 State legislative session to modify the valuation methodology and so end the plaintiff's action. The effort was unsuccessful when the bill passed by the legislature was vetoed by the governor due to his assessment that it did not satisfactorily meet the needs of the State and the rail car companies.

In the meantime, the first consequence of this increased tax on the State's coal industry occurred when Detroit Edison announced the shift of significant spot coal purchases from Montana to competing supply areas, particularly the SPRB in Wyoming. In this utility's view, the increased car tax assessment was a sufficient addition to the spot market price to move Montana coal onto the uncompetitive margin for supplemental spot market purchases.

The tonnage actually diverted during 1995 is not clear, but may have been on the order of 400 to 500 thousand tons. If the lawsuit is not settled during early 1996, similar volumes are likely to be lost from Montana during the current period, and such losses could well extend into the future as shippers

implement purchasing strategies which minimize payments of what they view as an unfair tax. It should also be noted that the lawsuit described above does not include the legal effort of approximately 90 private railcar owners towards the same ends, and which has been initiated as a class action.

Closely related to the State's tax on privately owned cars is a similar levy by the Crow Tribe on railcars that cross the Crow Reservation on the BNSF mainline. While the property value allocation method is the same as the one currently used by the State Department of Revenue, a flat three percent tax rate is applied. A significant problem for shippers is that, to date, the State has not accepted payments to the Crow Tribe as credits offsetting the ad valorem taxes assessed by the Department of Revenue. In effect, private cars crossing the Reservation are taxed as property twice, once by the Crow Tribe and again by the State.

- **Environmental Regulations** - A variety of statutory requirements and regulations govern the development and operation of a coal mine, with a system of permitting and compliance inspections required by the regulatory agencies. Three primary permits are required to develop and operate a coal mine — a reclamation permit, a water discharge permit, and an air quality permit. These are summarized below:

  - **Reclamation permit** - The federal Surface Mining Control and Reclamation Act of 1977 ("SMCRA") developed a national body of standards to assure that surface disturbance in the course of coal mining was reclaimed upon completion of the job. The states were given the opportunity to achieve primacy (that is, to pass state legislation meeting federal standards and to have responsibility for the enforcement of that legislation), with SMCRA requiring federal oversight of permitting and inspection by those state agencies that attained primacy. The responsible federal agency is the Office of Surface Mining Reclamation and Enforcement ("OSMRE") under the U.S. Department of the Interior. Montana has primacy under SMCRA.

    The responsible agency for issuing a mine permit in the State is the Montana Department of Environmental Quality ("Montana DEQ"), which is both the permitting agency and the regulator. Once issued, the permitted area is subject to periodic inspections and strict compliance is required with the terms of the permit. Acquiring a permit can take as long as five years or more, depending on the size of the proposed operation.

    While the state is the issuing agency and regulatory agency for private, state, and federal lands in Montana, OSMRE is the responsible agency for issuing and regulating permits on Indian reservations. For lands lying outside a reservation but designated Indian Lands, OSMRE and the State have joint authority.

  - **Water discharge permit** - The Water Quality Act, enacted in 1977, is an amendment of the 1977 Clean Water Act which, in turn, amended the Federal Water Pollution Control Act of 1948 and 1972. This act established the National Pollutant Discharge Elimination System ("NPDES") which requires a permit for facilities that emit pollutants into

designated bodies of water. Permits are issued through state agencies and in the State the Montana DEQ is the issuing and the regulatory agency.

- **Air quality permits -** These permits are a result of the passage of the Clean Air Act in 1970, and any facility or operation which releases particulate matter into the atmosphere is required to obtain such a permit.
- **Major Facilities Siting Act -** Concerns during the early 1970's over the environmental impacts which would result from what then appeared to be an imminent and wide-scale development of electric power generating stations and other energy conversion facilities in eastern Montana led to the passage of the Major Facility Siting Act requiring that any such project obtain a "certificate of environmental compatibility and public need".

  The Act appears to have the potential to impact the coal industry in four areas — the construction of mine-mouth electric generating stations, the construction of the transmission lines necessary to convey electricity from these stations, the construction of coal beneficiation facilities, and in-situ coal bed gasification. The facilities affected are specifically identified as:

  - electricity generating facilities of more than 50 megawatt capacity with a cost exceeding $10 million
  - coal gasification facilities producing more than 25 million cubic feet of gas a day and costing in excess of $10 million.
  - coal conversion/beneficiation facilities utilizing 500,000 or more tons of raw coal a year and costing in excess of $10 million.
  - electric transmission lines exceeding certain capacity, length, and right-of-way ownership limitations
  - any underground in-situ coal gasification operation

  Many sectors of industry have complained about the provisions of the Act, particularly the extremely open-ended nature of the review process. This process can be long and drawn out, it subjects the project sponsor to considerable risk in spite of the time and effort devoted to obtaining a certificate, and there is no assurance as to when a certificate might be issued. In this circumstance, project planning and financial scheduling become extremely difficult. It is the contention of many observers that the vague nature of the Act has discouraged a number of economically viable and environmentally sound coal-related projects from even attempting to meet the requirements of the review process.

  An area of particular concern to the future of the State's coal mining industry is the retarding effect the requirements of the Act as presently interpreted have on future construction of mine-mouth electric-generating facilities. It is the understanding of the Study Team that there currently are several such projects which fall under the control of the Act which are not moving forward due to the uncertainties concerning the review

process. A "Major Facility Siting Consensus Group" comprised of industry, environmental, community, and state government representatives is working on the development of proposed modifications to the Act, to be submitted to the legislature in 1997.

E. FISCAL AND ECONOMIC IMPACTS ON STATE

The coal industry has provided significant revenue contributions during the past 20 years through the severance tax, the Gross Proceeds Tax, and the Resource Indemnity Groundwater Assessment Tax, and through its 50 percent share of federal royalties. During this period there has been a general downward trend in revenues from the severance and gross proceeds taxes and from RIGWAT, due in large part to the decreases experienced in coal selling prices. Fluctuations and a slight recent decline in the State's share of federal royalties also reflect lower prices, as well as year-to-year changes in the amount of coal mined from federal lands.

While coal mining is an important source of revenue to the State, providing nearly $50 million in revenues in 1995 from severance tax receipts and from the State's share of federal royalties, its impact on local governments in the coal-mining counties is proportionally more significant.

Nearly 1,000 workers were employed at Montana's coal mines in 1995, with an estimated 400 of these workers living in Wyoming and commuting to the mines, primarily from the Sheridan area. The estimated 580 Montana residents employed earned approximately $31 million in 1995, including benefits, and likely paid on the order of $1 million in state income taxes. Total purchases of goods and services in the state by Montana coal mines are estimated to be slightly more than $40 million, and more than 1,600 additional jobs are estimated to have been created in the State in 1995 as a result of this activity. The combined payroll generated directly and indirectly from coal mining during the year was an estimated $67.5 million. While this figure represents a relatively small portion of Montana's statewide labor income of around

$8.5 billion, it is an important share of the economy in the southeastern part of the state.

The counties on which coal mining currently has the most significant fiscal and economic impact are Big Horn and Rosebud, with coal mining directly or indirectly accounting for an estimated 8 percent of county employment and nearly 11 percent of labor income in Big Horn County in 1995, and an estimated an estimated 22 percent of county employment and almost one-third of labor income in Rosebud County. The impact on Richland County is considerably less since there is only one small mine operating, while the development of mining in Mussellshell County is only now beginning.

SECTION III - STUDY METHODOLOGY

A. INTRODUCTION

The completion of the Study was a four-phase process involving a wide range of literature research, interviews, and the development of forecasting models. The investigation relied heavily on the Study Team's prior experience with the Montana coal industry through previous business and technical consulting engagements in the state, as well as its working familiarity with the U.S. coal and utility industries. The completion of each phase is discussed below.

B. PHASE I - BACKGROUND OF MONTANA COAL INDUSTRY

Background information was compiled on both producers and markets, and an analysis was made of recent period coal sales by geographic market sector and by consumer (that is, utility or industrial). Trade literature from the industry was systematically reviewed and a review of the evolution of Montana's coal resource taxation policies was conducted.

C. PHASE II - ASSESSING FUTURE MARKETS AND COMPETITION

Interviews were conducted with staff and management in the production, transportation, and consumer sectors. The objectives of these interviews were to discuss major factors which will impact the supply and demand of Montana's coal, to obtain the views of both producers and consumers concerning anticipated demand during the Study Period and the impact of competing supply sources, and to obtain the views of both producers and consumers regarding existing and anticipated Montana sales contracts. Key questions for consumers involved the following on a plant-by-plant basis:

- expectations regarding future generation capacity utilization
- the impact of any new technologies which could improve their generating effectiveness and lower costs
- the effect of deregulation on their system

- how they see their fuel sourcing strategies changing during the next ten years
- utility respondents were asked specifically how they viewed the role that Montana will play in their future coal procurement activities

Producers were asked essentially the same questions regarding existing and anticipated coal sales contracts as those above, and additionally the following:

- their production plans
- how they saw Montana's markets evolving
- their producing cost structure as compared with that of their major competitors, particularly those from the Southern Powder River Basin
- how they viewed state government's role in the future development of the Montana coal industry

Interviews in the transportation sector were conducted primarily with representatives of the Burlington Northern Santa Fe, and with representatives of several of the ports and transfer facilities. Interview questions directed toward the railroad were focused primarily on future utilization plans and capital investments for BNSF mainline routes serving the Northern and Southern Powder River Basin, the balancing of coal movements between the two sides of the basin and the ability to equalize contract coal transportation rates, and actions to maintain their overall market share. Little information regarding these issues was obtained, however.

Upon completion of this work, a detailed study of the market factors which will determine Montana's future coal production was conducted and conclusions were developed concerning the likely resolution of each and its impact on future coal production from Montana. It is understood that some factors cannot be predicted with any degree of accuracy given the early stage of their resolution and the high level of uncertainty which prevails (as in the issue of electric utility deregulation).

D. PHASE III - DEVELOPMENT OF FORECAST MODELS

This phase began with the scheduling of future coal sales from Montana on a contract-by-contract basis, including the annual tonnage and selling price anticipated for each contract by the mine's production and marketing personnel, and for projected sales on the spot market using PRB price forecasts for various coal quality specifications and markets. Using the forecast production levels as a basis, in conjunction with the expectations of mine management and projections of industry productivity prepared by the Study Team, the employment level of each mine was forecast on an annual basis.

The tonnage forecast to be shipped and the projected selling prices for the individual contracts and spot market opportunities were then combined to provide a total annual production value and composite sales price a ton for each mine. The annual tonnage and average price from each mine were then combined to provide a total production figure for the state, and a composite, state-wide average coal selling price.

A state resource tax model was then developed and tested with the assistance of the accounting staffs from several of the mines in the Study Area, with testing accomplished by replicating calculations for historic tax payments at these mines. For each year in the Study Period, each type of resource tax was calculated, as well as the State's share of federal coal lease royalties, using the composite projections of annual production and selling prices discussed above. This was done initially on a ton basis, with the amount of each tax multiplied by projected tonnage to yield an annual total to the State.

Using the projections of employment and of tax revenues, in conjunction with information on goods and services purchases, employment multipliers, revenue distributions to local governments, and related items, the state-wide and county-level fiscal and economic impacts were forecast on two bases — direct economic effects and indirect economic effects.

Direct economic effects include the employment of coal miners and other personnel, and the purchase of goods and services by the mines from other Montana businesses, and this component was projected as discussed above.

The indirect economic effects were analyzed through input-output modeling. An input-output model is a mathematical representation of an economy in which a change in the output of an industry, such as coal mining, is linked to changes in sales from support industries, changes in wages paid to industry employees (coal mine workers), and changes in purchases by their households and other sectors. While several input-output models were considered for the Study, the Regional Input-Output Modeling System ("RIMS II") model developed and maintained by the U.S. Department of Commerce, Bureau of Economic Analysis was utilized.

SECTION IV - STUDY CONCLUSIONS

A. SUMMARY

In developing both the qualitative and the quantitative conclusions regarding the outlook for the Montana coal industry during the Study Period, several **general observations** served to establish a frame of reference. The most important of these are as follows:

- U.S. coal production is expected to increase from a reported 1.02 billion tons in 1995 to slightly less than 1.10 billion tons in 2005, with a continued increase to 1.12 billion tons by 2010. While U.S. electricity demand growth will continue at an expected 1.8 percent a year on average, more efficient generation and transmission technologies will retard the fuel needs for base load generation. Coal's share of electrical generation will decrease modestly from its current 57 percent to 54 percent during the Study Period, with new peaking loads being supplied by natural gas-fired combustion turbines. New coal-fired capacity is expected to be restricted to a limited number of independent power and cogeneration projects, and to repowering of older coal-fired stations.
- The concurrent growth in coal production from the Powder River Basin is expected to be from the current 285 million tons a year to around 370 million tons a year during the Study Period. By the year 2005, the Powder River Basin is expected to supply one-third of all coal produced in the U.S.
- Fostered primarily by the intense competition which will be brought about by the progressing deregulation of the U.S. electric utility industry, fuel supplies will be subjected to substantial price pressure. With fuel constituting up to 70 percent of the operating cost of power generation, utility and independent generators will focus strongly on fuel prices as an avenue to maintain their competitive positions. Coal prices are thus likely to continue to decline in real terms throughout the Study Period.
- To maintain their economic viability, U.S. coal producers will continue efforts to improve productivity and to reduce costs. Much of this effort will entail expansion of production at individual mines in order to achieve greater economies of scale. The industry will continue to experience excess production capacity.
- The market dynamics of the Montana coal industry will continue to be dominated by the transportation link in the coal chain. Railroad operating and marketing strategies will continue to be the primary determinant in the evolution of markets for Montana coal.

Based on the analyses in the Study of current and future market conditions facing the Montana coal industry under the Base Case forecast, the following summarized findings were developed concerning the **outlook for the Montana coal industry**:

- Total production from Montana will remain essentially flat during the Study Period, increasing from the current 40 million tons a year to a projected 44 million tons a year by 2005. A significant decline to less than 38 million tons is projected for 1996, related primarily to production cutbacks at the Rosebud Mine as a result of a surplus of hydropower in the Pacific Northwest.
- In nominal terms, the composite selling price of coal from the state will decline from 1995 levels by more than $1.00 a ton to 1998 as a result of the renegotiation and/or termination of contracts with above-market prices. A gradual increase in the composite price is not forecast until 2002.
- No new mines are anticipated to be constructed in the state during the Study Period other than the Bull Mountain Mine No. 1 now in the development stage. Based on information available at the time of the Study, it is assumed that this mine will be successful in obtaining niche markets for its production, and will be able to increase production to around 4.0 million tons a year by the end of the Study Period. An expansion of markets sufficient to justify the development of new mines in the Ashland area of Rosebud and Powder River counties is not expected before the end of the Study Period at the earliest. The possible exception would be the development of a high-volume operation with production costs so low that it could capture market share from existing Powder River Basin mines. After examination of the capital and operating costs associated with these potential greenfield mine projects, the Study Team concludes that this possibility is remote and that justification of new mine investment will have to wait until post-2005 market expansion.
- In the Base Case forecast, one of the currently-producing mines is expected to cease production during the Study Period. The Big Sky Mine is assumed to close at the end of the year 2000 due to reserve depletion, increasing costs, and lack of expanded markets for non-compliance coal. Contracts currently supplied from Big Sky are anticipated to shift, for the most part, to other Montana producers. While Peabody will seriously evaluate the development of its North Ashland area resource blocks during the 1996 - 1999 period as a potential extension of the Big Sky operation, the Study Team concludes that a lack of market growth, variations in the sulfur and sodium content of coal from the North Ashland area, the development cost, and Peabody's focus on its Southern Powder River Basin mines will lead to a decision not to proceed.
- Employment at Montana's coal mines is forecast to decline by almost 20 percent during the Study Period, from the current 1,000+/- to around 810+/- as a result of continuing productivity gains and cost cutting measures.

- The State's annual coal-related revenues are forecast to decline by some $8 million by 1998, and essentially remain at that level through the remainder of the Study Period as a result of the renegotiation and/or termination of contracts with above-market prices.
- Development of the coal resources in the Ashland area will require the construction of rail access either along the proposed Tongue River Railroad route or by eastward extension of the existing BNSF spur serving the Rosebud and Big Sky mines at Colstrip. It is the opinion of the Study Team that the timing for construction of access, such as the Tongue River Railroad, will be controlled from all practical aspects exclusively by the BNSF. Until the development of a rail route such as this fits the BNSF's strategic plans and receives the railroad's active support, perhaps even through equity investment, the project will be viewed as risky by the capital markets and will not be able to attract investor attention. It is believed that strategic reasons for encouraging the support of the BNSF may well come into being at some point during the Study Period, related, for example, to the need for an alternative or supplemental route to the existing mainline across the Crow Indian Reservation.
- The impact of the proposed Tongue River Railroad on the competitiveness of coal from the Northern Powder River Basin versus that from the Southern Powder River Basin in North Central markets and Midwest markets served by the Great Lakes cannot be assessed accurately at the present time using standard delivered cost analysis. Since the railroads will continue to have pricing flexibility in both parts of the basin, they can optimize market share, capacity utilization, and profitability. The prediction of transportation rate charges which might be associated with a shortening of the rail distance to these markets and the associated adjustments in delivered cost are therefore extremely difficult to predict with any expectation of accuracy.

With regard to **public policy changes**, it is the Study Team's opinion that there is little the State can do by way of changes in public policy to effect positive change in the coal industry in the near-term, for the following reasons:

- The State's problems are perceptual to some degree, with both producers and consumers believing that:
  - the State does not like its coal industry
  - there is too much political uncertainty in the State's policies
- A reduction in the State's coal severance tax would have little material impact on the expansion of markets for Montana coal other than to foster a more positive perception of the State's attitude.
- Any reduction in the resource taxes imposed on the State's coal production would almost certainly trigger a similar reduction by Wyoming, in order to

allow mines in the Southern Powder River Basin to maintain their competitive position and their current market share.

- The evolution of coal markets available to the State's producers is well beyond the State's ability to influence, since
  - the Burlington Northern Santa Fe Railroad essentially determines Montana's markets, and
  - there are a number of critical factors, most notably deregulation of the electric utility industry, which will be the primary determinants of the direction of future coal markets, in the U.S. as a whole and for Montana producers in particular.

B. FUTURE MARKETS FOR MONTANA COAL

All of the critical market issues identified and discussed in Section VI-D of Volume I will influence the future demand for Montana coal to greater or lesser degrees. The Study Team's conclusions on these issues, based on an understanding of their components at the time of the Study, are presented in summary fashion in the following discussions, including their likely impact on the future of the State's coal industry.

In considering these framework discussions, it should be recognized that the coal industry is extremely dynamic, with the industrial and consumer segments of the economy driving U.S. and world coal supply and demand. Like all economic enterprises in today's fast-paced global economy, the coal industry is extremely fluid, subject to quick modification by politics, societal preferences, and technical change. This tabulation of issues thus should not be considered exhaustive, since new issues can emerge at any time.

- **Deregulation of the U.S. electric utility industry** - This issue will be the most significant factor by far affecting Montana's future production during the Study Period, and will surpass implementation of the 1990 CAAA's Phase II requirements as a determinant of future mine output. It is much too early, however, to predict the course and the timetable that deregulation will take, particularly as it will impact Montana's coal industry. What is certain is that the intensely competitive electric power markets created by deregulation, which will translate directly into downward pressure on coal prices, will present significant challenges to the State's mines, although perhaps little in the way of opportunities until well after the end of the Study Period.

- **Implementation of the 1990 CAAA** - While there may be opportunities for Montana producers to acquire niche markets related to specific coal quality parameters other than sulfur content in helping generating facilities meet Phase II requirements by January 1, 2000, the total tonnage produced will be affected little by the increased SO_2 emission limits. The now-apparent overcompliance of utilities under Phase I and the resulting surplus of bankable emission credits will, in fact, retard growth of utility market segments where Montana's coals have opportunities until 2003 - 2004, since higher-sulfur coals will continue to be burned until that time. While the resolution of issues related to NO_x is still uncertain, it is likely the impact on Montana producers will be slight. With regard to issues involving air toxins, the initial belief is that any impact on Montana's coals will be favorable, since they contain relatively low levels of Harp's-related elements and compounds. This observation may be greatly oversimplified, however, given the complexity of the Harp's issue and the uncertainties over eventual control programs and the role of technology in reducing the Harp's content of coals.
- **Consolidation of the U.S. railroad industry** - Consolidation could continue until only three or four dominant nationwide systems running coast-to-coast remain. While the concentration of market power held by the major carriers has been strengthened by consolidation, the result has been favorable to the Southern Powder River Basin as two very large, efficient, well-capitalized rail systems have competed intensely for market share in a coal supply basin they both view as critical to their futures. This has permitted the geographic expansion of Southern Powder River Basin markets through greatly lowered transportation costs. Optimization strategies resulting from the proposed merger of the Union Pacific and Southern Pacific lines may further enhance the position of the Powder River Basin in domestic utility markets. To-date, the benefit to Northern Powder River Basin producers has been limited, but the possibility of further single-line hauls created by the merger of the Burlington Northern and Santa Fe systems may provide advantages in certain market segments in the future. While additional consolidation of the national rail network may increase competitive opportunities for Powder River Basin coal in eastern markets via more efficient movements, it must be remembered that the carriers will continue to act in their self-interest in fostering the competitiveness of the Powder River Basin and will likely collect any rents which may be available.
- **Consolidation of the U.S. coal industry** - One of the most significant phenomena which has affected the U.S. coal industry during the past decade or so is the rapid consolidation of producers through acquisitions and mergers. While the industry is still quite diverse and no producer can claim to truly control any market sector, one of the more significant impacts of this consolidation has been an increase in large, highly productive and capital intensive mines with their resulting lower production costs, which, in turn, has forced many of the smaller, undercapitalized, and higher cost producers out of business. While it is problematic that the recent level of consolidation will continue, and, in fact, there is evidence that it has reached somewhat of a plateau, its impact will affect the industry throughout the Study Period. Any direct impact on Montana producers as a result of mergers within the state is

unlikely; however, there is the potential for impacts resulting from common ownership of mines in both the northern and southern portions of the Powder River Basin, as is the case with Kneecap Corporation and Peabody Coal Holding Company. Internal decisions concerning the best utilization of invested capital, overall market strategies, and the ability to ship from multiple mines under a single contract can all affect these companies' mines in Montana.

- **Future developments in western U.S. coal transportation** - While new technology and capital investment by rail carriers will increase coal transport efficiency and productivity, the resulting lower haulage costs may do no more than help Powder River Basin producers maintain their high competitiveness against competing fuels such as natural gas, and against competing sources of supply including imports. Rail carriers must also be concerned about eventual competition from "coal-by-wire" where generating facilities sited more proximate to coal mines are able to deliver electrical energy more economically over transmission lines, rather than through the transport of fuel to generating facilities located in the service area. Extensive applications of this eventuality are not likely to be a factor in railroad pricing strategies until the latter stages of the Study Period.
- **Enhancements of Powder River Basin coal quality** - It is unlikely this issue will have a material impact on production from Montana, and the existing SynCoal plant at the Rosebud Mine is forecast to continue at its demonstration plant rate. While the expansion of this facility to a million tons a year cannot be completely discounted during the Study Period, without government subsidies the economics of this plant appear uncertain to the Study Team.
- **Establishment of electricity and coal futures markets** - An electricity futures market will be established during 1996, and likely could be functioning efficiently by 1997. Contracts traded initially will involve delivery points at the California - Oregon border and at Palo Verde, California, and additional delivery points and contracts are likely to be established, should these prove to be as successful as predicted. The net impact on coal producers may be a further reduction in price volatility since the price risk of the output product — electricity — can be hedged, and since the availability of an efficient price discovery mechanism will tend to inhibit radical price excursions. While the feasibility of setting up a coal futures contracts likely will continue to be investigated, implementation appears doubtful during the Study Period due to contract definition problems resulting from the wide range of quality specifications which are involved and the difficulties in establishing reliable information on which to base transportation differentials to delivery points.

Within the framework established by the assumptions and conclusions developed by the Study Team regarding the major market issues discussed above, demand projections for Montana coal were prepared for existing and potential new North

American markets and for export markets. These projections, which are presented in detail in Section VI-D of Volume I, are summarized by geographic sector below.

- **"Local" Montana Market** - The three forecast cases all assume that the Colstrip generating units will continue to be aggressively underutilized under any change resulting from deregulation or from a change in ownership. It was also assumed that during the post-1996 Study Period, the sharp reductions experienced at Units 3 and 4 during 1995 and early 1996 as a result of abundant hydropower will not be repeated, owing to a return to hydropower supplies in the electricity markets served by the Colstrip facility reflecting the more typical moisture conditions of the past decade. A sharp reduction in the demand for coal at Colstrip is forecast for 1996, however, from the typical annual level of around 9.3 million tons experienced during the recent past to around 7.7 million tons a year. The forecasts of annual demand by Colstrip during the Study Period range between 9.0 million tons in the Downside Case and to slightly more than 10.0 tons in the Upside Case. Both the Base and the Downside cases assume that half of the approximate 600 thousand tons of annual coal demand at Montana Power's Cortege Station will continue to be supplied by Montana producers, while in the Upside Case, all annual demand is to come from Montana producers.
- **North Central Region** (primarily North and South Dakota, Minnesota, and Wisconsin) - This area is forecast to continue to be the key market region during the Study Period for Montana production, with a modest but steady increase in demand due to a gradual increase in capacity utilization of generating stations currently supplied from the state, particularly those of Minnesota Power and Northern States Power. Market growth for Montana production will likely be restricted at some of the facilities, however, by aggressive competition from producers in the Southern Powder River Basin, in conjunction with competition for market share between the two railroads which serve that region. In the Upside Case, a more aggressive increase in plant capacity factors and successful price competition by Montana producers with the assistance of the BNSF yields a forecast of an additional 2.0 million tons of annual market demand by 2005. The Base Case assumes more modest expansion as a result of capacity utilization, while the Downside Case represents the continuation of current sales levels.
- **Midwest Region** (primarily Illinois and Indiana) - The Base and Downside cases both assume that the two principal consumers of Montana coal — Detroit Edition and Commonwealth Edition — will continue to be the largest markets for the Spring Creek and Decker mines, but with significant differences in spot market sales and nominations under term contracts. The tonnage variations in both cases incorporate the impact of aggressive competition by Southern Powder River Basin producers for incremental volumes, varying assumptions regarding future capacity utilization of generating facilities at both utilities (particularly for Commonwealth Edition as utility deregulation evolves), and, in the Downside Case, a continuation of consumer objections to the State's taxation policies. Completion of the renegotiation process is assumed for the remaining above-market term

contracts held at the Decker Mine, with contract tonnage to remain at current levels and prices to be adjusted downward by 1998.

In the Upside Case, additional demand for Montana coal by existing major customers in this region is projected to be in the range of 2.0 million tons annually by the end of the Study Period due to increased capacity utilization and blending activities in order to meet Phase II emission requirements. Other Michigan and Ohio markets, some of which are beginning to burn small tonnages of Montana coal and others that are projected to develop during the Study Period primarily due to blending strategies, are incorporated in the Base and Upside cases. While production from the Northern Powder River Basin will not be competitive in Midwest blending markets against supply from the Southern Powder River Basin in situations where delivery by rail is required, Montana's mines will have the ability to compete for generating facilities capable of receiving coal on the Great Lakes via the Venture Fuels terminal at Superior, Wisconsin. Key utilities for growth of this market during the Study Period will be Consumers Power in Michigan and Centaur Energy/Toledo Edition in Ohio, and will involve generating facilities that can receive coal directly at plant docks or via short truck hauls from lake terminals. The size of the blending market which can be accessed economically by lake movement is relatively limited, however, and during the Study Period, involves sales on the order of 100 to 500 thousand tons a year for each market opportunity. The maximum size of new markets accessed from the Great Lakes is forecast in the Upside Case to be 1.5 million tons by the year 2005.

- **Pacific Northwest Region** (Washington and Oregon) - The most important market in this region will continue to be PacifCorp's Centralia Station in central Washington. It is assumed that the decision will be made by the plant's owners to meet Phase II emission requirements by additional blending of lower-sulfur coals, rather than through capital investment in flue gas desulfurization equipment. The increasing costs associated with production at the adjacent Centralia Mine, which currently supplies the major portion of the supply requirements at the plant, will also be a factor in dictating increasing replacement with other production. Utah producers will be a major factor in this market, however, and the combination of highly-competitive delivered prices, limits on the amount of sodium the Centralia boilers can tolerate, and the desire of the utility to maintain a diversified fuel supply will limit the share obtainable by Montana producers. The annual levels forecast by the end of the Study Period range from 1.0 million tons in the Downside Case to 2.0 million tons in the Upside Case.

- **South Central Region** (Texas) - As lignite reserves supplying mine-mouth generating facilities are depleted and/or become higher cost to produce, Powder River Basin coals are expected to gain a significant new market as replacement fuel for these large boilers. The market share forecast to be captured by Montana producers will be modest, however, due to the more competitive position of coal from the Southern Powder River Basin. The Texas replacement market is projected to involve 1.0 million tons annually by

the end of the Study Period in the Base Case and as much as 2.5 million tons in the Upside Case.

- **Southeastern Region** (primarily Alabama and Mississippi) - Prompted by mandated Phase II emission reductions, a potential market building up to 2.0 million tons annually by the end of the Study Period is incorporated in the Upside Case forecast. The principal consumers would be the Tennessee Valley Authority and the Southern Companies. This demand is predicated on the ability of selected Montana coals to penetrate niche markets where selected coals offer quality advantages over coals from the Southern Powder River Basin, such as is currently evident at Plant Daniel, and where the combined mine-mouth and transportation costs provide the lowest-cost fuel option.

- **Province of Ontario** - In both the Base and Upside cases, modest deliveries building up to 700 thousand tons a year are forecast for Ontario Hydro's Nanticoke Station.

- **Export Markets** - While there continues to be hopeful discussion regarding opportunities for Powder River Basin coal in world export coal markets, the Study Team concludes that such markets will be of little significance to Montana producers during the Study Period with the exception of the Bull Mountain mine. International demand for coals of less than 10,000 Btu's/lb. heat content and which are produced at mines located at substantial distances from export facilities will be low, and Powder River Basin production of this quality will be unable to compete economically with other off-shore or domestic producers. Bull Mountain's success as a development project is predicated in large part on the acquisition of niche markets for its coal in the Pacific Rim, with 80 to 90 percent of the mine's output forecast for this market. Modest exports by other Montana producers, primarily Spring Creek, are expected to continue during the Study Period at a maximum level of 500 to 600 thousand tons a year. Total Montana coal exports are forecast to grow to 4.0 million tons a year by 2005 in the Base Case, again with Bull Mountain as the principal supplier. Corresponding Upside and Downside Case forecasts are 4.5 and 3.6 million tons a year, respectively. Should Bull Mountain fail to develop as expected, export tonnage in the Base Case is projected to be around 400 thousand tons a year by the end of the Study Period.

- **Additional Markets** - Two other markets were also considered in assessing market opportunities — the Southwest Region, primarily Arizona, and Mexico. It is the conclusion of the Study Team that neither of these markets, which are anticipated to be available during the next few years to Powder River Basin coals in the former instance and to coal from the Western U.S. in the latter, will represent viable opportunities for Montana producers during the Study Period. The cost of transportation associated with reaching these markets from Montana will not allow competitive delivered prices against other suppliers from the Western U.S., such as those in the Powder River Basin.

Another potential new market, the replacement of lignite coal at North Dakota utility boilers with subbituminous coal from Montana, was assessed briefly, with the conclusion being that such opportunities are highly unlikely until the period 2006 to 2010 at the earliest.

While the relative importance of each of these markets varies considerably, with the exception of the Montana sector, aggressive competition from other producing areas currently exists and can be expected to continue during the Study Period.

C. FORECASTS OF IMPACT ON MONTANA PRODUCERS

Since Montana's coal producers effectively compete in two venues — an intrabasin area which includes producers in the Southern Powder River Basin ("SPRB"), and all other non-PRB producing areas — it is evident that competitive issues are complex, including all or some portion of the following factors for any given market situation:

- a mine's coal quality
- a mine's production costs
- a mine's transportation costs
- a consumer's quality requirements
- a consumer's purchasing alternatives

The primary competition for Montana coal in existing markets and in the majority of potential new markets is the Southern Powder River Basin, with the following points being significant:

- The SPRB has experienced the greatest increase in production during the past decade of any area in the U.S. or worldwide.
- The Study Team believes the SPRB currently has a production capacity on the order of 280 million tons a year, compared to a current annual production level of around 245 million tons. Production capacity is projected to increase to around 350 million tons a year by 2000.
- Production costs in the SPRB are appreciably lower than in the northern portion of the basin, on the order of $1.50 to $2.00 a ton for cash production costs.
- The SPRB is served by two railroads which compete for market share, and as a result, transportation costs from this region are lower than for the NPRB. In addition, it should be noted that beginning in 1996, coal from the SPRB

can be delivered to the Great Lakes market via the terminal at Superior, Wisconsin by the Union Pacific railroad.

- The NPRB is served by a single railroad — the Burlington Northern Santa Fe — which can move coal east and west from Montana, or to the south through the southern portions of the basin.
- The NPRB has a transportation disadvantage to many markets when the northern rail route is used due to the additional distance which must be traveled verses the SPRB.
- If coal from the NPRB is transported to the south through the SPRB, it passes lower-cost mines, and thus likely lower-priced production from these mines.
- It is important to remember that fuel purchasing decisions are made on the basis of delivered cost. While the heating content of the Montana coals is greater than that of the SPRB mines, it is not sufficiently higher to overcome the lower mine prices and shorter haulage distances to many of the PRB markets.

In summary, it is the Study Team's opinion that SPRB producers have and will continue to hold a considerable competitive advantage over NPRB producers in most major markets.

The projections of annual production and composite selling price in each of the three forecast cases developed by the Study Team are presented in the series of tables which follow, with the Base Case figures predicated on the assumptions and conclusions described above (Table 1).

Table 1 - Base Case Projections for Study Area
(Thousands Short Tons)

Mine	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Spring Creek	7,645	8,350	8,050	7,825	9,750	11,500	13,175	12,950	13,000	13,000
Decker	10,360	10,410	10,460	10,760	11,060	10,560	10,260	10,360	10,460	10,560
Rosebud	8,490	10,250	10,400	10,600	10,550	10,750	10,700	10,700	10,700	10,700
Big Sky	5,000	5,150	5,200	4,200	2,500	--	--	--	--	--
Absaloka	5,200	5,275	5,350	5,300	5,150	5,200	5,200	5,200	5,250	5,250
Savage	300	300	305	310	310	310	310	310	310	310
Bull Mountain	800	1,750	2,360	2,810	3,335	3,660	3,960	3,960	3,960	4,260
Total Montana Production	37,795	41,485	42,125	41,805	42,655	41,980	43,605	43,480	43,680	44,080
Composite NPRB Price Per Ton	$9.02	$8.86	$8.05	$8.27	$8.07	$8.23	$8.23	$8.31	$8.44	$8.64
Total NPRB Industry Employment	990	982	982	942	940	893	837	827	825	813

The Upside Case (Table 2) represents the estimated maximum demand scenario, as opposed to the most likely production outlook presented in the Base Case. Achieving the Upside Case production level would require:

- Aggressive efforts by rail carriers to develop and expand markets for Montana coal by assisting producers in achieving highly competitive fuel prices on a delivered basis.
- Intense interest on the part of non-traditional Montana coal consumers in testing, and subsequently in using, NPRB coals as a blending component, or as a replacement for their current fuel supply.
- Decisions by key utilities to make further decisions to switch to compliance coals to meet CAAA Phase II emission limits instead of capital investment in scrubbers.
- Aggressive efforts by Montana producers to lower production costs and tailor shipped coal qualities beyond the Base Case assumptions.
- Aggressive action by the State agencies to overcome the perceptual problems which have evolved regarding Montana as a place from which to source coal supply, or in which to conduct coal mining activities.

Table 2 - Upside Case Projections for Study Area
(Thousands Short Tons)

Mine	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Spring Creek	7,845	9,700	10,440	11,115	12,840	13,690	15,065	15,140	15,390	15,590
Decker	10,360	11,180	11,830	12,630	13,530	14,030	13,830	14,130	14,330	14,530
Rosebud	8,590	10,550	10,700	10,800	10,900	10,900	10,900	11,050	11,100	11,150
Big Sky	5,250	5,650	5,700	4,700	4,800	5,100	5,200	5,200	5,300	5,400
Absaloka	5,450	5,775	5,850	5,800	4,650	5,100	5,200	5,200	5,250	5,250
Savage	300	300	305	310	310	310	310	310	310	310
Bull Mountain	900	1,750	2,460	2,960	3,635	4,010	4,360	4,360	4,360	4,660
Total Montana Production	38,695	44,905	47,285	48,315	50,665	53,140	54,865	55,390	56,040	56,890
Composite NPRB Price Per Ton	$8.95	$8.79	$7.92	$8.07	$7.92	$7.91	$7.91	$7.96	$8.11	$8.32
Total NPRB Industry Employment	992	1009	1036	1018	1012	1015	1007	1004	1002	993

Since it is highly unlikely that the maximum market expansion represented by the Upside Case could be realized in reality, the more likely “achievable” upside case is clearly some fraction of the Upside Case increment over the Base Case. The Study Team estimates that, on an extremely subjective basis, the increment which can be obtained would be one-third dependent on railroad market strategies, one-third on State actions to support the coal industry, and one-third on the power market decisions of utilities.

Conversely, the Downside Case (Table 3) represents the lowest level which NPRB production could fall to during the Study Period. It is predicated primarily on the assumption that the State initiates public policies which are considered as adverse by coal producers and consumers, and which, in turn, discourage the current customer base from taking optional deliveries.

Table 3 - Downside Case Projections for Study Area
(Thousands Short Tons)

Mine	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Spring Creek	7,625	8,100	7,750	7,205	8,550	10,000	10,275	9,550	9,600	9,600
Decker	10,310	8,460	8,060	8,060	7,560	7,560	7,560	7,360	7,360	7,360
Rosebud	8,190	8,850	9,000	9,350	9,600	9,150	9,000	9,400	9,700	9,900
Big Sky	5,000	4,900	2,700	1,500	1,500	--	--	--	--	--
Absaloka	5,200	5,275	5,000	4,900	3,700	3,700	3,700	3,700	3,700	3,700
Savage	300	300	305	310	310	310	310	310	310	310
Bull Mountain	460	1,750	2,360	2,810	3,335	3,660	3,960	3,960	3,960	4,260
Total Montana Production	37,085	37,635	35,175	34,135	34,555	34,380	34,805	34,280	34,630	35,130
Composite NPRB Price Per Ton	$8.99	$8.93	$8.16	$8.43	$8.26	$8.38	$8.45	$8.61	$8.76	$8.97
Total NPRB Industry Employment	990	972	909	855	847	840	769	750	757	753

D. PROJECTIONS OF FISCAL IMPACTS ON STATE

In the Study, projections were made of the principal revenue streams to be received by the State under current statutes during the Study Period. In the **Base Case**, severance tax revenues are forecast to decline in nominal terms for a period of time and then return to around 1996 levels by the end of the Study Period. During this period the State's share of federal royalties is forecast to decline by around nine percent in nominal terms from 1995 levels (Table 4).

Table 4 - Total Tax Revenues - Base Case
($ millions)

	Severance	Gross Proceeds	RIGWAT	Federal Royalties
1995	33.939	11.536	1.000	16.916
1996	30.433	10.731	0.951	15.210
1997	32.269	11.736	1.034	15.645
1998	28.694	10.717	0.955	13.712
1999	28.927	11.010	0.979	13.788
2000	28.286	11.052	0.978	13.569
2001	28.084	11.154	0.984	13.663
2002	29.072	11.651	1.023	14.135
2003	29.202	11.686	1.026	14.705
2004	29.859	11.938	1.047	15.045
2005	30.717	12.402	1.085	15.452
Totals	295.544	114.075	10.061	144.924

1995 figures for comparative purposes only; totals for 1996 through 2005
Note: Numbers may not add due to rounding

In the **Upside Case**, severance tax revenues are forecast to drop initially and then increase in nominal terms throughout the Study Period by a total of around 18 percent over 1995 levels. During this period the State's share of federal royalties is forecast to increase by around 17 percent in nominal terms (Table 5).

Table 5 - Total Tax Revenues - Upside Case
($ millions)

	Severance	Gross Proceeds	RIGWAT	Federal Royalties
1995	33.939	11.536	1.000	16.916
1996	30.745	10.875	0.966	15.314
1997	34.682	12.568	1.109	16.876
1998	31.744	11.848	1.054	15.281
1999	32.768	12.428	1.101	15.835
2000	34.043	13.177	1.139	16.358
2001	35.689	13.926	1.194	17.107
2002	36.614	14.430	1.234	17.496
2003	37.200	14.614	1.249	18.377
2004	38.489	15.082	1.287	19.023
2005	40.044	15.783	1.344	19.771
Totals	352.019	134.732	11.677	171.438

1995 figures for comparative purposes only; totals for 1996 through 2005
Note: Numbers may not add due to rounding

In the **Downside Case**, coal severance tax revenues are forecast to decline in nominal terms throughout most of the Study Period, with a slight increase in the last three years, for an overall decline of around 26 percent. During this period the State's share of federal royalties is forecast to increase by around 27 percent in nominal terms over 1995 levels (Table 6).

Table 6 - Total Tax Revenues - Downside Case
($ millions)

	Severance	Gross Proceeds	RIGWAT	Federal Royalties
1995	33.939	11.536	1.000	16.916
1996	29.919	10.421	0.926	15.057
1997	28.995	10.641	0.946	14.112
1998	23.562	9.005	0.812	11.411
1999	23.197	9.098	0.819	11.161
2000	23.274	9.379	0.818	11.041
2001	23.230	9.534	0.827	11.189
2002	23.474	9.783	0.846	11.238
2003	23.518	9.789	0.846	11.686
2004	24.303	10.085	0.870	12.048
2005	25.145	10.544	0.907	12.411
Totals	248.617	98.280	8.618	121.354

1995 figures for comparative purposes only; totals for 1996 through 2005
Note: Numbers may not add due to rounding

E. PROJECTIONS OF STATE AND LOCAL ECONOMIC IMPACTS

The contribution of coal mining revenues to local governments in the coal-mining areas from the Gross Proceeds Tax is proportionally more significant than the contribution to state revenues, particularly in Big Horn and Rosebud counties. In the Downside Case, the decline in revenues available to these two counties could place considerable fiscal stress upon their governments and might require the counties to seek alternative sources of revenue to make up the loss. The Base Case suggests a more moderate fiscal impact on county governments, while in the Upside Case, the Gross Proceeds Tax revenues available to county governments would increase by 20 percent or more.

In each of the three forecast cases, the number of Montana residents working at coal mines is projected to decline by 2005. In the Upside Case, the decrease in employment of state residents would be minimal, while in the Base Case employment of state residents declines by around 15 percent. In the Downside Case, employment of Montana residents is projected to decrease by more than 25 percent. These

declines reflect continued increases in productivity and the shift of a larger share of the State's coal production to mines which traditionally are staffed primarily by out-of-state workers.

These forecasts are presented in Tables 7 - 9, with 1995's figures presented for comparative purposes.

Table 7 - Projected Economic Effects of the Forecast Cases
Big Horn County, 1995 - 2005

	1995	2000	2005
Base Case			
Residents Employed at Mines	102	86	86
Secondary Jobs Supported by Mining	290	249	246
Total Employment Impact of Mining in County	392	335	332
Total Job Increase/(Loss) from 1995		(57)	(60)
Potential Population Increase/(Decrease) Attributable to Mining		(143)	(150)
Upside Case			
Residents Employed at Mines	102	98	88
Secondary Jobs Supported by Mining	290	281	265
Total Employment Impact of Mining in County	392	379	353
Total Job Increase/(Loss) from 1995		(13)	(39)
Potential Population Increase/(Decrease) Attributable to Mining		(33)	(98)
Downside Case			
Residents Employed at Mines	102	90	75
Secondary Jobs Supported by Mining	290	248	215
Total Employment Impact of Mining in County	392	338	290
Total Job Increase/(Loss) from 1995		(54)	(102)
Potential Population Increase/(Decrease) Attributable to Mining		(135)	(255)

Source: BBC estimates based on SESI forecasts, 1995.

Table 8 - Projected Economic Effects of the Forecast Cases
Rosebud County, 1995 - 2005

	1995	2000	2005
Base Case			
Residents Employed at Mines	450	394	290
Secondary Jobs Supported by Mining	548	480	344
Total Employment Impact of Mining in County	998	874	634
Total Job Increase/(Loss) from 1995		(124)	(364)
Potential Population Increase/(Decrease) Attributable to Mining		(310)	(910)
Upside Case			
Residents Employed at Mines	450	394	375
Secondary Jobs Supported by Mining	548	480	457
Total Employment Impact of Mining in County	998	874	832
Total Job Increase/(Loss) from 1995		(124)	(166)
Potential Population Increase/(Decrease) Attributable to Mining		(310)	(415)
Downside Case			
Residents Employed at Mines	450	327	260
Secondary Jobs Supported by Mining	548	394	309
Total Employment Impact of Mining in County	998	721	569
Total Job Increase/(Loss) from 1995		(277)	(429)
Potential Population Increase/(Decrease) Attributable to Mining		(693)	(1,072)

Source: BBC estimates based on SESI forecasts, 1995.

Table 9 - Projected Economic Effects of the Forecast Cases
Richland County, 1995 - 2005

	1995	2000	2005
Base Case			
Residents Employed at Mines	*	*	*
Secondary Jobs Supported by Mining	*	*	*
Total Employment Impact of Mining in County	33	27	27
Total Job Increase/(Loss) from 1995		(6)	(6)
Potential Population Increase/(Decrease) Attributable to Mining		(15)	(15)
Upside Case			
Residents Employed at Mines	*	*	*
Secondary Jobs Supported by Mining	*	*	*
Total Employment Impact of Mining in County	33	27	27
Total Job Increase/(Loss) from 1995		(6)	(6)
Potential Population Increase/(Decrease) Attributable to Mining		(15)	(15)
Downside Case			
Residents Employed at Mines	*	*	*
Secondary Jobs Supported by Mining	*	*	*
Total Employment Impact of Mining in County	33	27	27
Total Job Increase/(Loss) from 1995		(6)	(6)
Potential Population Increase/(Decrease) Attributable to Mining		(15)	(15)

*Mining employment total suppressed for confidentiality of single mine in county.
Source: BBC estimates based on SESI forecasts, 1995.

Mussellshell County, in which the new Bull Mountain Mine No. 1 recently began production, faces a different set of challenges than the other counties in the Study Area. In each of the three forecast cases, the buildup to full production at this mine is expected to lead to an increase in revenues to the county's government, and new jobs and income for the county's residents. Issues facing the county during the Study Period are likely to more closely resemble the impacts typical of new resource activity, that is, providing sufficient infrastructure to meet the needs of new residents and making the social adjustments required to integrate a growing population and work force. The forecast is presented in Table 10, with 1995's figures presented for comparative purposes.

Table 10 - Projected Economic Effects of the Forecast Cases
Musselshell County, 1995 - 2005

	1995	2000	2005
Base Case			
Residents Employed at Mines	*	*	*
Secondary Jobs Supported by Mining	*	*	*
Total Employment Impact of Mining in County	N/A	233	260
Total Job Increase/(Loss) from 1995		233	260
Potential Population Increase/(Decrease) Attributable to Mining		583	650
Upside Case			
Residents Employed at Mines	*	*	*
Secondary Jobs Supported by Mining	*	*	*
Total Employment Impact of Mining in County	N/A	263	274
Total Job Increase/(Loss) from 1995		263	274
Potential Population Increase/(Decrease) Attributable to Mining		658	685
Downside Case			
Residents Employed at Mines	*	*	*
Secondary Jobs Supported by Mining	*	*	*
Total Employment Impact of Mining in County	N/A	233	260
Total Job Increase/(Loss) from 1995		233	260
Potential Population Increase/(Decrease) Attributable to Mining		583	650

* Mining employment total suppressed for confidentiality of single mine in county.
Source: BBC estimates based on SESI forecasts, 1995.

F. SENSITIVITY TO CHANGES IN STATE PUBLIC POLICY

An analysis was conducted of the sensitivity of future Montana coal production and revenues to changes in the severance tax. The Base Case production and composite price projections were used in this analysis, and the effects of increases and decreases in the severance tax in increments of two percentage points were determined for each of the five existing surface mines which are applicable (the Absaloka Mine was not included since it produces from Indian land and is not subject to the State's severance tax).

Using the current rate of 15 percent of contract selling price as the benchmark, model runs were made at rates of 9, 11, 13, 17, 19, and 21 percent for the four mines producing coal with a heat content of more than 7,000 Btu's/lb. For the one mine producing coal with a heat content of less than 7,000 Btu's/lb., for which the statutory rate is 10 percent, runs were made at rates of 4, 6, 8, 12, 14, and 16 percent.

The singular results of this exercise were to emphasize the relatively modest effect reductions in the severance tax impart to coal selling prices at the mine level. While any reduction would be welcomed by producers on the theory that such reductions could be passed on to the consumer, which, in turn, would increase competitiveness, the magnitude of the reductions estimated in this analysis — in the range of 8 to 20 cents a ton — are small as a component of the selling price at the mine level. As an example, a 20 cent a ton change in mine price lowers the delivered cost of coal by approximately one cent/mmBtu's, assuming a $6.50 a ton mine-level price, current contract rail rates and a 1,000 mile haul, and a 9,400 Btu's/lb. coal.

Given the fact that railroad pricing policies and competitor's sales strategies have the potential to move the price of coal by well over a dollar a ton on a delivered basis, it is not clear that a reduction of this magnitude would be significant. In addition, it is not a foregone conclusion that any such reduction would not be captured by the railroad. This is not to say that the ability to adjust delivered prices by fractions of a cent may not become critical, but at present it does not appear likely that a modest reduction in severance taxes would offer much in the way of expanding Montana's markets.

SECTION V - RECOMMENDATIONS CONCERNING PUBLIC POLICY

A. INTRODUCTION

Task 5 of the Scope of Work stated, in part, that recommendations be made relating to public policy issues that could enhance the competitive position of the State's coal industry. These recommendations, presented below, were developed by the Study Team after completion of its investigation and the analysis and evaluation of the forecast cases which were prepared. The recommendations which were developed are grouped into two categories for discussion below — those which have potential for direct, near-term impact on Montana coal producers through market expansion or reduction in administrative costs and headaches, and those which can have an indirect impact by demonstrating the State's support for its coal industry. In both instances, certain changes in public policy can alter the perceptual problem that the State is not supportive of its coal industry.

B. ISSUES HAVING A DIRECT IMPACT

Those changes which offer potential for direct impact include changes in the State's coal severance tax rate and the adoption of more effective and efficient regulatory and administrative practices.

Coal severance tax - One of the most frequently heard concerns among both producers and consumers is the negative impact which the State's severance tax has on the coal industry. While the cost of this tax to the producer can easily be calculated, and clearly represents an economic burden of greater magnitude than in other coal-producing states, it is not evident to the Study Team that a reduction in the tax rate would have sufficient economic impact to lower coal selling prices sufficiently to expand the State's markets and increase production significantly, since such a reduction would likely not occur in a vacuum. Two of the most probable reactions would be a

concomitant decrease by Wyoming in its severance tax and the capture by the BNSF of any decrease in production costs.

Since one of the State's principal coal-related problems is perceptual, however, even a modest reduction in the severance tax has the potential to send a positive message to both producers and consumers that the State is aware of the industry's problems and is attempting to be supportive. For this reason, the Study Team believes a reduction is worthy of consideration.

While a reduction in the severance tax would have a positive impact in addressing the State's perceptual problem relative to coal, it must be remembered that any increase in the tax rate, even a relatively modest increment, would have a devastating impact on future Montana coal sales by reinforcing the negative perception that producers and consumers currently hold. The negative impact of such a tax increase would be much greater than the positive impact of a similar-size decrease in the tax rate. More critically, the impact would be felt almost immediately in the form of reductions in spot market sales.

Domestic market development - use the influence of the State's elected officials to develop high-level relationships with their counterparts and political contacts in key market areas which could open avenues of communication regarding increased utilization of Montana coal, particularly in the Midwest, North Central, and Pacific Northwest regions and in Texas.

Export market development - In view of the importance of Pacific Rim export markets to the successful development of the Bull Mountain Mine, it is recommended the State take whatever actions it can to promote and encourage the overseas sales of Montana coal. Although export opportunities for other Montana producers will continue to be limited, the same recommendation would apply to them, for example, in connection with Spring Creek's market development activities in Spain and Japan. The form of trade

assistance envisioned is similar to any export promotional activities the State may provide for its other industrial products — marketing assistance, promotion of Montana coal through trade offices the State maintains in foreign locations, positive mention of the State's coal industry in any overseas contacts by State officials, and similar actions. Any influence the State may have with components of the export transportation chain, that is, the railroads and transloading terminals, may be helpful as well, particularly in developing a joint effort to publicize export opportunity through these facilities.

Conduct of administrative and regulatory activities - Educate the State's administrative personnel responsible for permitting, environmental compliance, and taxation issues as to the technical and business fundamentals of the coal industry. In conjunction with this effort to educate state agencies concerning the realities of coal industry operations and economics, the fact that the executive and legislative branches are supportive of the industry and view it as vital to the State's economy should be communicated to State employees who are involved with coal-related activities in an administrative capacity. This particularly includes the staff members of the regulatory and taxation departments, which have significant impact on industry operations and performance, and which can generate considerable administrative aggravation for mine management. One of the industry's most common complaints is that the approach to regulatory issues is an adversarial one rather than one of mutual trust, cooperation, and problem solving.

C. ISSUES HAVING AN INDIRECT IMPACT

The negative perceptions concerning the State's attitude towards its coal industry are heavily ingrained and cannot be mitigated or changed overnight. To change these perceptions would require time and consistency in public policy actions, and repeated demonstration, particularly at the level of support expected on a day-in, day-out basis. The Study Team makes two suggestions as to how the State might approach demonstration of its support of the coal industry — one being to publicize and promote

the State's coal industry and the second being to support the development of the Tongue River Railroad.

Publicizing the State's coal industry - To demonstrate support of its coal industry and acknowledge its importance to the State's economy, the State could take modest steps toward publicizing the significance of Montana's coal mines and coal resources. Models for this effort can be found in North Dakota and Wyoming, where state organizations tout the scope of their state's reserves, mining efficiencies, and high levels of environmental stewardship in tourist publications and other promotional literature. At present, Montana tends to ignore its coal industry in its promotional literature for tourism and economic development. Points which could be raised include:

- Montana ranks first in the nation in the size of its demonstrated coal reserve base and is second only to North Dakota in the size of its original coal resources. The State's coal resources are vital strategic interests of the nation, since more than half the electricity consumed in the U.S. during the Study Period and beyond will continue to be generated by coal.
- Montana's coal mines are large in scale, use amazingly big equipment, and operate very efficiently.
- Montana's mine operators take environmental reclamation extremely seriously and make exemplary efforts to return mined areas to productive and ecosystem consistent conditions. Reclaimed areas frequently support more wildlife than they did prior to mining.
- Since several of Montana's mines maintain observation overlooks and/or provide literature to the public, it might be educational to suggest visits to the mining areas as a part of the promotion of tourism.

Support of Tongue River Railroad - The Study Team also recommends that the State support the development of the Tongue River Railroad. It should be recognized, however, that the following issues will affect the timing of such development:

- It is not likely that there will be sufficient market expansion to support a mine in the Ashland area solely on this basis until after the year 2005.

- While an aggressive operator could develop a new mine and be in production in the Ashland area by the period 2002 to 2003, this would require taking markets away from existing NPRB and SPRB producers.
- A decision to move forward with the Tongue River Railroad in the near future would likely result in the completion of the railroad no sooner than during the period 2002 to 2003, taking into account the acquisition of rights-of-way and the length of the permitting process.

Notwithstanding the recommendations and discussion presented above, one of the overwhelming conclusions of the Study is that many of the numerous forces which will affect the future of Montana's coal industry are outside the control of either the State or the producers themselves, and accordingly, here are only limited actions which can be taken by either to increase production or to expand markets significantly.